W.S.S.
WAR SAVINGS STAMPS
ISSUED BY THE
UNITED STATES
GOVERNMENT

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

EDITORS:
CHARLES CHASSAIGNAC, M. D. ISADORE DYER, M. D.
COLLABORATORS:
C. C. BASS, M. D., Prest., Amer. Soc. of Tropical Medicine.....
JOHN M. SWAN, M. D., Secty. American Soc. of Tropical Medicine..... Ex Officio
L. R. DE BUYS, M. D., Secretary Louisiana State Medical Society.....Ex-Officio.
RUPERT BLUE, M. D., Surgeon General, United States Public Health Service.
H. D. BRUNS, M. D., Tulane University of Louisiana.
C. F. CRAIG, M. D., Capt., U. S. A.
S. T. DARLING, M. D., Federated Malay States.
W. H. DEADERICK, M. D., Hot Springs, Arkansas.
E. M. DUPAQUIER, M. D. (Paris), Tulane University of Louisiana.
A. G. FRIEDRICHS, M. D., New Orleans, La.
J. T. HALSEY, M. D., Tulane University of Louisiana.
JOS. HOLT, M. D., New Orleans, La.
F. A. LARUE, M. D., Tulane University of Louisiana.
OTTO LERCH, M. D., Tulane University of Louisiana.
E. S. LEWIS, M. D., Tulane University of Louisiana.
R. C. LYNCH, M. D., Tulane University of Louisiana.
E. D. MARTIN, M. D., Tulane University of Louisiana.
R. MATAS, M. D., Tulane University of Louisiana.
AUGUSTUS McSHANE, M. D., Greenwood, Miss.
PAUL MICHINARD, M. D., Tulane University of Louisiana.
C. J. MILLER, M. D., Tulane University of Louisiana.
F. W. PARHAM, M. D., Tulane University of Louisiana.
E. A. ROBIN, M. D., Tulane University of Louisiana.
W. H. SEEMANN, M. D., Tulane University of Louisiana.
ALLEN J. SMITH, M. D., University of Pennsylvania.
EDMOND SOUCHON, M. D., Tulane University of Louisiana.
E. R. STITT, M. D., Commander, U. S. N.
J. A. STORCK, M. D., Tulane University of Louisiana.
R. P. STRONG, M. D., Harvard University.
ROY M. VAN WART, M. D., Tulane University of Louisiana.

Vol. LXX MARCH, 1918 No. 9

EDITORIAL

THE PHYSICIAN'S LICENSE TAX.

Now is the time to agitate the question of the license tax imposed on the physicians of this State.

It is notorious that Louisiana is one of the only two States imposing such a tax and that New Orleans is one of a quartet of cities in the whole country doing likewise.

Arguments against the tax are numerous and well known, having been generally discussed for several years in medical societies, by medical journals and newspapers. It is unnecessary at this time to repeat them.

Our purpose is to stimulate in time proper interest and action by the various parish medical associations and to suggest that active steps in the same direction be taken by the officers of the State Medical Society.

The State Legislature will assemble in May next, and there is no time to lose in preparing the question for proper submission and favorable action. We understand that the Governor has already expressed himself clearly as in favor of the repeal of the tax, and this support alone should be a tower of strength.

PROBLEMS.

We are saturated with the psychology of the hour. A questioning mind dips into the turbid pool of an uncertain future and draws out a mass of conflicting ideas—all confusing.

The daily press, mostly honestly, disseminates news which is too meager or contradictory to allow any conclusions. On the contrary, there is a continued unrest, as a result of the disorder. The adjustment of living is not easy and each man finds a new problem nearly every day.

The disturbance of the efficiency of almost every field of effort is a natural corollary, and this must go on so long as the grim specter of war stalks abroad.

The disposition to meet the demands of the hour is everywhere evident, but it is not easy—because of the lack of adjustment. The medical profession has only glimpsed the horizon of its field of effort. Not 50 per cent of the necessary military needs for medical men has been satisfied. Already the authorities are speaking in tens of thousands of medical officers to meet the needs of the army to be raised. At the same time, the smaller country places are beginning to feel the loss of much-needed medical service. The solution must be found sooner or later. Mobilizing the entire profession, speeding medical instruction, organizing under State direction, and other means have been suggested, but nothing has been done.

Meantime great movements have been operating for the proper medical and surgical care of soldiers—before, during and after their active service. Intensive instruction of the Medical Reserve Corps officers has been carried on in the large centers for several months. There is a plan under way to organize a great school for

medical officers at Ft. Oglethorpe, where, in addition to actual military training, provision will be made to give intensive instruction to several thousand men at one time.

Reconstruction hospitals will be established at various points in the United States, at which soldiers returning from the war and incapacitated by injury will be cared for until they are physically able to return to the pursuit of a livelihood. These plans contemplate provision for thousands of such soldiers.

Medical students have been put in the Enlisted Reserve Corps and under military control, so that they may be finished as doctors ready for military duty. The faculties of medical schools are being conserved, and it is likely that their operation will be further assured through some official recognition, in order that they may not lose their efficiency through the constant defection of those who are going into active military service. Many schools have already lost 50 per cent or more of their teaching staffs.

The activities of civil, religious and official endeavors have engaged the betterment of the physical and social surroundings of the soldiers, to the end that in the delay of preparation they may not lose the great *morale* which is so necessary to victory.

The game goes on without much sign of an early end, and the accident of death among those who are already engaged will only spur the rest to a greater endeavor. Utopia seems very far away, and, in the fierce fire of a broadening conflagration, there is small hope for any time to dream. The solution seems to be where the greatest force can be directed at the earliest moment, and the unrest at enforced delays can only make the problem greater and more indefinite.

ORIGINAL ARTICLES

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

DENGUE FEVER.

By COL. C. C. McCULLOCH, Medical Corps, U. S. Army,
Formerly Professor of Military and Tropical Medicine, Army Medical School,
Washington, D. C.

The word "dengue" is said by some to be derived from the Arabic and means "weakness," by others to be a corruption of the Spanish equivalent of "dandy," a term applied because of the stiff and formal manner in which ambulatory patients with the affection carry themselves. A common synonym is "breakbone fever." It has been defined as "a specific and highly infectious fever peculiar to warm climates. It occurs usually in widespread epidemics, and when once introduced into a community it extends, like influenza, with great rapidity, affecting a large proportion of the inhabitants. It differs from influenza mainly in the absence of pulmonary and other serious complications, and in the presence of a well-marked rubeoloid eruption and peculiarly severe rheumatic-like pains in the joints and limbs."

Epidemics of dengue fever are confined chiefly—in fact, almost exclusively—to the tropics and subtropics, since, for practical purposes, the extreme southern part of the United States may be called a subtropical region.

It does not occur in pandemic extensions like influenza, but is more sporadic and capricious in its incidence. Influenza attacks all countries and all latitudes in its course. Dengue strikes certain places only, heavily and extensively indeed, but only here and there, though it may, for instance, attack at the same time places as far apart as China and the United States. It may be stated, no doubt with approximate correctness, that it is present endemically in India, in Egypt and in East and Central Africa and Senegambia, certainly in Beirout on the Syrian coast, and in the West Indies, the latter region apparently being its favorite home.

The history of dengue has not been accurately recorded, as it has been distinctly differentiated only within the last hundred years or thereabouts.

It was present in Egypt and Java in 1799, and extended as far as India on the one side and to Spain on the other. Benjamin Rush

described the symptomatology of the disease as observed in Philadelphia in 1780. Manson says there is a tendency for it to assume a pandemic character about once in twenty years, and to last for three or four years.

In 1824 and the following years it extended very widely over India, parts of Africa and to South America, the West Indies and the southern United States. In the '30s, '40s and '50s of the last century there were other slighter outbreaks extending over a similar area.

In 1870 there began a third so-called pandemic extension, which started from Zanzibar and thence spread successively to Suez, India and Singapore, to Cochin China, China and the eastern Archipelago. The tendency to follow trade routes and travel, which dengue possesses in common with other infectious diseases, is extremely well shown by the history of the extension of this epidemic.

Since that time there have been limited outbreaks every few years. The disease has been seen in Australia and South Africa, in Asia Minor and the Greek Archipelago.

In 1894 it prevailed in the southern United States. At Fort Ringgold, Texas, in that year, nearly every soldier in the garrison was attacked. I was stationed at that post then, and we certainly had a strenuous time for several weeks. We had to turn the barracks into hospitals, and naturally were busy night and day. The fact that the disease is not serious alone tended to render the situation bearable. This epidemic illustrates one of the most striking features of the disease—the great rapidity with which it spreads when once started. In a month's time so many people are affected as to seriously interfere with the business and daily occupations of the inhabitants, in another month nearly every one has passed through an attack and normal conditions reappear, with sporadic cases now and then, perhaps in newcomers.

In 1897 it was present at the same time as yellow fever in Cuba and in Texas.

Dengue has been more or less prevalent among the soldiers in the Philippines since our occupation of those islands. In 1902 there was an annual admission rate approaching 200 per 1,000 of the troops there.

It is only within the last few years that we have begun to have some definite information as to the etiology of dengue. Graham, at Beirout, in Syria, announced the fact that he had experimentally produced dengue fever in a series of cases by the bites of infected

insects, mosquitoes of the species *Culex fatigans*. This statement, received with some skepticism at first, was subsequently confirmed by Ashburn and Craig, of the Army Medical Corps, who carried out an elaborate research along these lines in the Philippine Islands in 1907. Graham also announced the discovery of the parasite of the disease, an intracorpuscular organism in the blood, somewhat similar in nature to the *Babesia bigemina* of Texas cattle fever. Eberle, a volunteer medical officer, a little later described a parasite which he thought he had discovered in the blood. Neither of these observations has been confirmed by more recent investigators. Nobody else has ever been able to demonstrate them. I was surgeon of the post in the Philippines at which Eberle pursued his investigations and saw some of his preparations. Of course, one could not form a definite opinion on a piece of scientific research by casual observation of this kind, but I was inclined to believe that Eberle's parasites were nothing more than artefacts and altered blood corpuscles. Subsequent work not having confirmed his results, this scepticism was doubtless justified.

Ashburn and Craig, in the work above mentioned, were not able to find these or other parasites in the blood or elsewhere in connection with the disease. As stated, they did experimentally verify Graham's discovery in relation to conveyance by the *Culex fatigans* mosquito. They also produced the disease in healthy soldiers by the intravenous injection of the blood of patients suffering from the disease. The blood injected after filtration through a porcelain filter that would retain the smallest known bacteria also produced the disease. This would indicate, of course, that the infective agent is perhaps ultramicroscopic in nature, at least at some period of its development, and therefore in all probability a protozoan of some kind. That the virus might be conveyed in some other way than by the mosquito is, of course, possible, until definitely disproved, but, judging by analogy with malaria and yellow fever, the probability is remote that any other method of transference from the sick to the well will ever be discovered. The period of incubation averaged about three and a half days, varying from two and a half to seven days. Some subjects of the experiment appeared to be absolutely immune. An attack produces immunity, but it is not known what is its duration. There is no special racial or sex or age distribution.

In regard to the varieties of the mosquito other than the *Culex fatigans* which may convey the disease, the facts cannot be regarded

as quite absolutely determined. From the quite constant association, however, of that species in large numbers with the dengue, and the consideration of the map distribution of the *Culex* mosquito and the disease, it seems probable that it is the principal one concerned. Brooks, however, states that, in one epidemic which he observed, the only mosquito present was the *Stegomyia calopus*. In Australia, in 1916, the *Stegomyia calopus* was experimentally proved to act as a vector.

As in some cases the mosquito conveyed the disease within twenty-four hours of the time it had become itself infected by biting a dengue patient, the investigators think that the parasite does not undergo a developmental cycle in the insect, but is for an indefinite time retained in a virulent condition in the mosquito's stomach and is regurgitated through the proboscis at the time of the bite. It was shown that the virus is infective in the patient's blood on the third or fourth day after the beginning of the symptoms. Experimentation on this point has, however, not been sufficiently extensive to definitely settle just when and for how long the virus is infective in the patient's blood.

Craig has published an interesting paper in which he emphasizes the similarity in many points between dengue, yellow fever, and Pappataci fever. Clinically the symptoms of all three are in many ways not unlike, and etiologically the resemblances are still more striking, from the fact that there is a virus present in the blood only at certain times, that the injection of filtered and unfiltered blood will produce the disease after very similar periods of incubation, that all are transmittted by insects, and that, in all, the infecting agent is evidently ultramicroscopic. Furthermore, these diseases are all infectious, but not contagious. In many ways they resemble the malarial fevers.

Craig thinks that these facts and analogies indicate that the diseases in question are caused by some kind of parasite with whose peculiar nature we are at present unacquainted, and which probably differs in important respects from any with which we are now familiar. He thinks that when the microscope is further perfected, or when some method of staining or culturing these organisms is discovered, they will be found to be closely related species of the same genus and most probably protozoal in nature.

The *symptoms* of dengue are quite characteristic in the great majority of cases, the pains, the fever and the rash being the promi-

nent triad of manifestations that the patient complains of and that are usually noted.

The onset is variable in my experience, sometimes with slight feelings of *malaise* for a day or two, but often coming on rather suddenly, with chilliness and pains in the head and lumbar region and in the limbs, followed in a few hours by burning fever and more severe pains.

Most often the pain is the symptom first complained of by the patient. Sometimes the pains are described as having come on with great suddenness and violence, as, for instance, while dressing in the morning. An observer forty years ago stated that "in all cases pain of greater or less severity is present. In the great majority it is the most urgent and distressing symptom, the earliest harbinger, the persistent companion and the last vestige of the disease." Another writer states that, "in more than half of the cases of dengue I have seen, the pain in the joints has been a symptom so well marked as to distinguish it from all other eruptive fevers." The some author thought pain in the small joints almost pathognomonic of dengue. There is nearly always headache and pain in the back; the headache is often described as racking or maddening, and frequently as if in the eyeballs; that in the back, as if it were being broken in two or the patient had been beaten with sticks.

I should not say, however, that these pains in the head and back are especially pathognomonic. I do not think they are as constant or severe as they are, for instance, in yellow fever, and especially in smallpox. They are often not severe, and may be absent. I, myself, remember having had a very pronounced case of dengue in the Philippines some years ago (after passing unscathed through the big epidemic at Fort Ringgold and several other subsequent ones, by the way) in which there was a very typical rash and rather high fever, with only a slight aching in the lumbar region and legs, and absolutely no sign of a headache at all during the entire course of the attack.

The characteristic pains, I should say, are those in the limbs. They are sometimes mild, and the fact is elicited only by questioning the patient, but they are always present, I think, and are generally bitterly complained of by the patients. They are usually referrred to the joints, though often described as being felt in the long bones or deep muscles. Manson says they are difficult to locate with precision. There is, as a rule, no redness or swelling of the joints. There is almost constant desire and effort to change the

position into a more comfortable one; at the same time these movements cause pain, and the sensations of the patient are in consequence often exceedingly disagreeable, as one can readily imagine.

Some writers describe after-pains in the joints as often continuing long into convalescence, but I do not myself recall observing this complication.

As to the temperature, there is described what is called a typical curve; this shows a sharp rise to the maximum within the first twenty-four hours, ordinarily to about 104° F., with a fall on the second day to from 100° to 102°, where it continues to about the fifth day, when it rises again to a point almost as high as it did at first. In another day or two it falls by crisis to normal. Now, one often sees a curve something like this, and then it is, as Ashburn and Craig say, practically pathognomonic of the disease. But one does not, I should say, see this curve always, although Ashburn and Craig think that in the majority of cases one can, on careful examination, trace the type even through the manifold variations that occur. This is quite possible, and I may have missed the point through lack of time or attention paid to the study of the charts. I am inclined to agree with Rogers, who quotes Charles, to the effect that dengue is ordinarily a disease of one paroxysm—a "three-day fever," it was often called, until we began to use that term for another specific disease manifested chiefly by fever. According to this idea, the temperature in dengue rises rapidly during the first twenty-four hours to 103° to 105° F., and then falls quickly about the second or third day to normal, or often below it, perhaps as far as 96° F. It does not then rise again unless from some accidental or complicating cause. During the time the temperature is elevated, it is observed frequently, the chart may show several remissions in the course of twenty-four hours. These observers attribute the so-called typical curve, which they say is comparatively rare, to be the occurrence of a sort of relapse grafted on to the original curve; what are ordinarily known as relapses, however, occur later. Manson says there is commonly a terminal rise from the fourth to the seventh day to 103° or thereabouts, which lasts only for a few hours.

It may be that the secondary rise occurs in the night, and, lasting only for a short time and often not rising very high, is missed in that way. Conditions we know in dengue epidemics are not favorable to close observation of symptoms. The patients are so numerous, and they are more interested in getting relief from their pains than in being made the subjects of scientific observation.

One is busy, sleepy and hungry, perhaps, and he puts this part of the work off until the next time.

A promising piece of reasearch might be done sometimes in one of these big epidemics to make the careful registration, say at four-hour intervals, of the temperature curves in a large series of cases, so as to settle definitely the point we have been discussing.

To take up the question of skin eruptions: At the beginning of the disease there is often a primary, red erythematous rash on the face and sometimes also on the extremities. Some describe it as a congestion rather than an eruption. This is generally missed unless especially looked for. According to Ashburn, it resembles a sunburn, or the effect of a hot bath. It fades when the temperature falls.

The secondary rash—and this is the characteristic polymorphous rash in dengue—appears on the average from the third to the fifth day of the disease. It is most common on the trunk and on the arms, but is also usually seen on the legs and often on the face, though not to so marked an extent as is measles. The rash closely resembles that of measles—so closely, in fact, that it is perhaps hardly worth while to try to distinguish any difference. Ashburn and Craig say it is not so dark and that the macules are not so coarse and not aggravated into such large patches as in measles, and that it is not so plain. This is another point that should be worked out sometime. There is described a type of secondary eruption, somewhat like scarlatina, though not so vivid in color, also an urticarial type. What is ordinarily seen, however, is the rubeolar type above described. It is often of very short duration and generally fades in a day or so.

Guiteras and Cartaya think the rash is actually present in all cases, but that it is sometimes missed by not being noticed or by its being very ephemeral. This appears very reasonable and in conformity with the facts in the case of the acute exanthemata. We could not very well diagnose chicken-pox or German measles, for instance, without any signs of an eruption present in the case. Charles thinks the occurrence of this rash without fever serves to differentiate dengue from all the other exanthemata.

In some cases, if closely watched, a fine furfuraceous desquamation may be observed. Nervous symptoms are seldom marked, though often there is exhibited irritability or mental depression.*

* Stitt, in his large experience in the Navy, has noted in many cases, especially in officers, a well-marked apathy and nervous depression extending through convalescence, which is often slow.

There is generally no albumen in the urine, and, if so, only a slight trace. Some observers describe enlargement of the lymphatic glands. I have seen this complication, but do not think it is common enough to be considered characteristic. Hemorrhage from the mucous membrane is mentioned as an occasional symptom.

The tongue usually shows a yellowish fur in the middle, with red tip and edges. The pulse may be rapid and as high as the elevation of the temperature would lead us to expect. This is an important differential point in the distinction from yellow fever. Some competent observers state that the pulse is "remarkably slow" and "not over 100," and so on. However, even when this occurs, it is not in accordance with Faget's law in yellow fever. It is not so much the actual rate of the pulse that is significant there, though that is slow, as it is the gradual drop from time to time during successive observations of the temperature in the early stages of the disease.

In the examination of the blood in dengue we find no change in the appearance or number of the red blood cells. There is, however, a leukopenia (of about 4,000) and a decrease in the polymorphonuclear leucocytes (to about 45 per cent), with relative increase of the mononuclears. These changes are most marked toward the end of the first week, but may be seen as early as the second day of the disease. There is also, according to Harnett, in India, an eosinophilia during convalescence.

Castellani says that the leukopenia is so constant and usually so marked as to be of considerable diagnostic importance.

Relapses are said to be frequent in dengue. Immunity perhaps does not last over a year or two. Some authorities, however, say that one attack protects, as a rule. The essential symptoms, according to Manson—and there is no other medical writer who can describe a disease accurately in so few words—are "suddenness of the rise of temperature, an initial stage of skin congestion, limb and joint pains, and a terminal rubeloid eruption."

As to the *diagnosis* of dengue: There should be no difficulty in recognizing it during one of the extensive epidemics so characteristic in its occurrence. Things are so plain then that "he who runs may read." But the first few cases of an epidemic, perhaps, or those cases that crop up more or less sporadically in places like Manila, where the disease seems to have become, in a sort of fashion, endemic, some of these cases, to repeat, may give rise to some difficulties in diagnosis. They will not often then be so difficult, I

think, if one will make a careful and detailed study of the history and symptomatology of the case.

The careless sort of professional work that confuses dengue fever and influenza, for instance, because of their similarity in rapidity of spread and in the great numbers of people rapidly affected, seems to me to be inexcusable. I have seen many epidemics and a large number of cases of both these diseases, and, judging from my experience in the matter, these two diseases are no more alike than are, for instance, acute bronchitis and German measles. Both are febrile in their nature and there is the similarity we have several times mentioned in the way they spread; beyond these things they have nothing in common.

The catarrhal symptoms, on the one hand, and the eruption and characteristic pains on the other, are the most important pronounced differences.

Of course, one must bear in mind that there are some mild cases occurring in all epidemics of infectious diseases that do not show any characteristic symptoms, and, in the absence of any specific blood or bacteriological tests for the disease, are really undiagnosable, except from their association with more typical cases. I am speaking in general terms only about the confusing of these diagnoses, but one will find, I think, that the idea is a practical one when he comes to handle the cases. If we know thoroughly the symptomatology and study and observe the cases carefully, it is in exceptional cases only that one will not be able to arrive at a satisfactory diagnosis from clinical symptoms alone. This is probably true throughout the whole practice of medicine. Physicians are perhaps inclined to depend too much on laboratory tests and trust to them somewhat to the exclusion of other clinical methods. For instance, they will allow themselves to get rusty on the physical examination of the chest, and miss diagnoses of early tuberculosis, when the laboratory findings are reported negative. We must remember that splendid diagnostic work was done before the development of any of our modern microscopic and laboratory methods. It appears, however, as though after a while we will only have to send our patients to the X-ray room to get pictures that will suffice in themselves for diagnosis.

But I must not digress further. Personally, I think there are only two diseases that are of much importance when we consider the question of the differential diagnosis of dengue, and these are yellow fever and measles.

As to yellow fever, one of the main points is the difference in the pulse rate in the two diseases. We note Faget's law of decreasing pulse rate with increasing or stationary fever during the early days in yellow fever; and, on the other hand, the sometimes quite rapid pulse in dengue. We consider the eruption in dengue and its absence in yellow fever. Brooks states concisely in this connection that "the rash is as much a part of dengue as it is of smallpox or measles." This means, of course, no rash, no dengue. The pains in the one case are chiefly articular and muscular, and in the other appear principally as frontal headache and rachialgia; these are the main points in the differentiation in early and mild cases of yellow fever. The late-appearing symptoms in severe cases of the latter disease are, of course, pathognomonic as opposed to dengue.

In the 1897 epidemic in Texas the best opinion seemed to be that both yellow fever and dengue co-existed, and, of course, there was endless trouble and discussion as to the diagnosis. Some physicians maintained to the end that there was no yellow fever present, that it was all dengue; this in spite of the fact of albuminuria and severe icterus and black vomit and death in some of the cases at various localities. This attitude is, of course, entirely out of the question in the present state of our knowledge of the two diseases. It is simply an expression of that peculiar attitude of mind characteristic of some physicians as well as of men of other occupations, the inability to get away from a preconceived prejudice that fits in with one's inclination and interests. It is an infirmity of the human mind to which all of us are subject to a certain extent; for instance, as we all know, the most accomplished physician is usually not a wise consultant in cases of disease occurring in his own family.

The next important disease in regard to its differentiation from dengue is, in my opinion, the *measles*. This often occurs in the army in adults, and appearing sporadically in one of the more or less endemic dengue districts is likely to give rise to some confusion. The polymorphous eruption of dengue very often resembles so closely that of measles that I, for one, have been unable to distinguish them. I had a case of typical measles in an officer's daughter at Corregidor, with history of exposure, coryza, Koplik's spots and all. The family were much surprised at the diagnosis, saying that she had had a moderately severe case of measles only the year before, or at least it was so diagnosed by the attending physician. On careful inquiry as to the other symptoms she had presented besides the eruption, and the examination of the post records as to the

presence of dengue, it was easy to come to the conclusion that her previous attack had been in fact one of dengue fever, and not of measles. How are we to tell them apart? I think that, by consideration of the history of the case, by the characteristic catarrhal symptoms and Koplik's spots in measles, and by the peculiar articular pains in dengue, we can generally arrive at a correct diagnosis.

Perhaps I should mention a few other diseases that might sometime come in question. It is at least worthy of note that the preliminary rash of dengue may be mistaken for scarlatina. The subsequent course will clear up the diagnosis in these cases. Rheumatic fever, which might sometimes lead to confusion, presents no rash, and there is usually no redness or swelling of the joints in dengue. If there is a question of malaria, the microscopic examination and the use of quinin will decide.

Caldwell described an epidemic of dengue among soldiers in South Africa, in which a striking feature was the appearance of small, shotty and painful enlargements of the lymphatic glands, inguinal, axillary and cervical. The diagnosis from plague was a feature of the study of this epidemic.

The pathology and morbid anatomy of dengue fever may be described as practically *nil*. There has certainly been no characteristic pathology worked up out of the few fatal cases that have been observed. In these cases the morbid anatomy was that of the respective complications that apparently were responsible for the fatal issue, usually pneumonia or meningitis.

As to *prognosis*, the mortality may be said to be almost nothing. No soldiers have died of the disease. There may be some danger of complications in the very young and in the aged, or those with already existing serious organic diseases, but the mortality here is rather that of the complicating condition, the dengue acting merely as a weakening and predisposing cause of death. The general mortality has been said to be increased, most likely in this way, in some epidemics where the statistics have been comparatively studied. A pernicious form of dengue, dangerous to life, which is rare, perhaps even of doubtful occurrence, has been described in India. Possibly the leukopenia existing in dengue would make complicating septic conditions more serious by lessening phagocytosis.

Now a few words as to the *treatment:* This may be briefly described as purely symptomatic. The symptoms, like those of most of the other acute infectious diseases, run a regular course, which, in

the absence of a specific remedy, cannot be cut short by treatment. Quinin has been found not to shorten the disease. We prescribe rest in bed, protection from cold, light diet and cooling drinks, of course. We give cold sponging for the fever, moderate doses of aspirin or phenacetin or Dover's powders for the pain when severe; sometimes morphin subcutaneously when the pains are very distressing.

It is said that purgatives do more harm than good, on account of the muscular movements thereby rendered necessary, which increase the pain.

Bromides, or even chloral, may be necessary for protracted sleeplessness, though Dover's powders are generally efficacious.

For the debility occurring in convalescence, the usual tonics are indicated. If joint symptoms persist, opium and belladonna liniments may be used, with gentle massage, and iodide of potassium internally. Adrenalin has been theoretically suggested for the commonly occurring depression and asthenia of convalescence. In some cases a change of climate may be advisable, and the use of hydrotherapy, massage and electricity as administered at the health resorts will hasten the return to normal health.

In *prophylaxis*, we come back again to rational ground. The only really satisfactory results are those accruing from measures directed at mosquitoes, either at their breeding-places, which will lead to permanent results when properly kept up, or to the protection of the individual from the bite of infected mosquitoes. These methods have been so fully described in recent literature that it is not necessary to repeat them here. Suffice it to say that the results are fully as striking and confirmatory of the mosquito theory of the conveyance of the disease as we have seen they are in the case of malaria and yellow fever.

I have had experience of a striking instance of this sort at a post in the Philippines, where I was stationed two or three years since. This was on Corregidor Island, at the entrance of Manila Bay. There had been considerable dengue fever at that place—in fact, it was one of the places where people were afraid to visit, as they notoriously contracted the fever there. Coincidently mosquitoes were a great pest. My predecessor as surgeon of the post, Lieut. Col. Woodruff, started a mosquito campaign with a view to improving the condition of the post as to health and comfort, and on relieving him I continued vigorously (there is no use to do anti-mosquito work in any other way) the campaign he had started. We put in screening wherever possible, and that measure was no doubt a help,

but our main efforts were directed against the breeding-places of the mosquitoes. There are no records at hand of the time it took to get results, but the important point is that ultimately the disease was practically abolished from the island. The very few cases that did occur could be traced to Manila and Fort McKinley, and they never acted as secondary foci of infection leading to any spread of the disease locally on the island.

In Port Said the fight against malaria resulted in the simultaneous disappearance of the dengue.

A theoretical means of avoiding infection is more or less complete isolation. This, in the case of diseases not especially dangerous, like dengue, will be found to be impracticable. However, in the case of the feeble, the very young or the aged individual, as in influenza epidemics, it would be well to try to protect them in this way, even to the extent of sending them out of the infected territory.

Rogers has described a fever occurring sporadically in India, principally in seaport towns, and in Ceylon, which he calls "seven-day fever," and thinks it a separate pathological entity. Castellani and Seidelin, on the other hand, believe it is "probably" sporadic dengue. When we look over the description by Rogers of the symptoms of this disease we are at once impressed by the striking resemblance of many of them to those of dengue. Rogers says the disease we are considering has a peculiar saddle-back type of temperature curve which distinguishes it from dengue, but he bases this statement on that theory of dengue which makes it a disease of one paroxysm. However, the typical dengue curve as described by many authorities, viz., preliminary rise, fall for several days, and then a final secondary rise, does not vary materially from Rogers' saddle-back curve in the seven-day fever. He says that rashes occur frequently. The pulse is slow. Pain, he thinks, is not so common nor so characteristic as in dengue. Rogers describes a bacillus, which he found in the blood, apparently related to *B. coli,* but with certain points of difference, and which agglutinated with the serum of patients, but his observations have not been confirmed. It is probably only accidentally present, like Sanarelli's organism in yellow fever.

The "six-day fever" recently observed by Deeks at Panama probably belongs in the same category. I should say we cannot make any dogmatic statement at present, but that the seven-day fever is probably a form of dengue.

DISPOSAL OF HUMAN BOWEL EXCRETA IN THE TROPICS.

By GEORGE P. PAUL, M. D., C. P. H.,
State Director, International Health Board, Rockefeller Foundation, Fiji.

One of the most difficult problems in the tropics, from the public health standpoint, is that of the disposal of human bowel excreta in such a way that it may not become a menace.

The data used in this article were gathered from the author's experiences in the British West Indies and the Fiji Islands.

The subject-matter relates principally to the rural parts of the tropics. Most of the large centers have good systems of excreta disposal. Some have water-carriage systems and others pail and dry privy systems. It may be stated, however, that a few large towns have no general means for the disposal of excreta, and each householder is allowed to do what pleases him.

Soil pollution in the rural parts of the tropics may be said to be universal. In fact, in some places, it is encouraged.

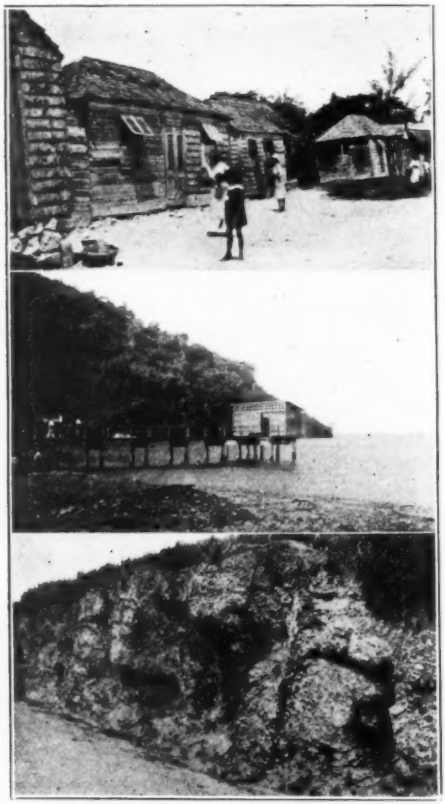
The class of people with whom we have to deal in the tropics makes the problem many times more difficult.

In the tropics the diseases principally spread by neglect of the proper disposal of human bowel excreta are typhoid fever, dysenteries, cholera, diarrheas and hookworm disease. If the institution of efficient means for the disposal of excreta will control the dissemination of these conditions, then very much will have been accomplished toward the improvement of the morbidity and mortality rates in the tropics.

It is frequently asked whether it is possible to approach the ideal in excreta disposal in the tropics? Education will accomplish much, but not everything. It may be said that three great obstructions stand in the way: ignorance, poverty and environment. Included under the last term are the general mode of life, the conditions of the soil, the proximity of the houses in many localities and the limited extent of land attached to each home. The people in the rural tropics live in settlements, in isolated homes, or in barracks or "lines." This last is the usual thing in estates and plantations.

The disposal of the excreta of persons living on estates should not be difficult to accomplish in an acceptable way, as the persons are under supervision and control. For them the pail or the septic tank systems may be used. In the Fiji Islands an unique water-

carriage system is employed on many of the large sugar estates. In the floor of the building runs a concrete drain about a foot deep and a foot wide. Through this drain water is constantly flowing. Over the drain are constructed compartments for individual use.



Rural homes in Barbados, showing proximity of houses.
St. Vincent.—General latrine overhanging sea, for disposal of contents of pail privies. Time allotted is 8 p. m. to 4 a. m.
Barbados.—Coral limestone formation showing large crevices and fissures.

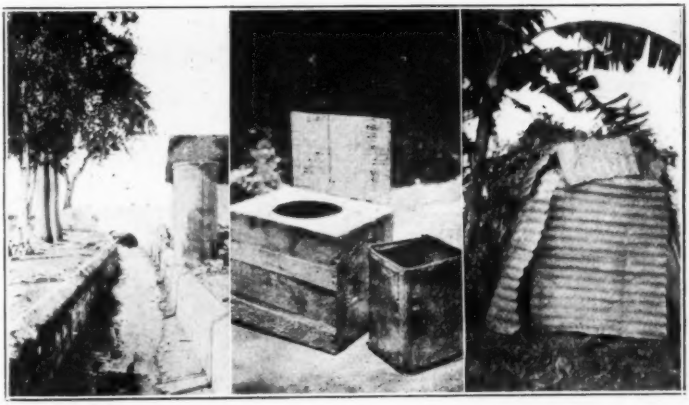
The user simply squats over the drain. The water carries the excreta to a septic tank. The floors of the house are cement, which makes them easy to keep clean.

In some of the tropical towns the pail privy with the conservancy system is employed. If the town is coastal, there is constructed a building overhanging the sea. The pails are daily taken to this

house and the contents dumped into the sea. A time is usually fixed for this purpose, generally during the night. In some places the excreta is emptied from the pails into a boat, which is taken to sea and the contents dumped. The latter method is to be preferred, as it prevents the shores and beach from becoming nuisances from tidal-deposited filth. In some towns the daily emptying of the pails in the established place of disposal is left to the individual householders, whereas in other places the local authorities attend to the collections. Prisoners are often employed for this purpose.

In rural settlements and homes the usual means for the disposal of human excreta, if any exists, is the pit privy. In one locality, of 993 homes, 265 had a privy of some sort, and, of these, only sixty-one may be said to be serviceable. In the village of 103 homes and 390 inhabitants, 102 houses were without any form of privy, the feces being indiscriminately disposed of on the ground near the homes. The incidence of ankylostomiasis in this village reached 99.2 per cent. In certain parts of the tropics the degree of ankylostomiasis infection acts as an index to the degree of soil pollution.

In the Island of St. Vincent the "pail-in-box" method is a much-employed method of disposal. A pail, or rather a kerosene tin, is placed in a fly-proof box, with one end of the box serving as a seat. A self-closing cover is attached. This makes a very efficient and economical form of apparatus. The only objection is that which applies to all forms of pail privies—will the contents be properly and safely disposed of?



St. Vincent.—Public urinal on edge of open drain, near public market.
"Pail-in-box" latrine in very general use. May be purchased for 18 cents.
Fiji.—A makeshift privy.

In the Island of Barbados conditions in the rural parts are similar to those of other tropical islands. The public health inspector, in his annual report, states: "In the country districts more than 50 per cent of the houses of the laboring class have no sanitary conveniences of any kind, and the practice of 'going out' (promiscuous deposit of excreta in the open) is almost universal in many villages and plantation tenantries."

The type of privy to be used in the rural parts of the tropics depends upon the character of the soil, the source of water supply, the proximity of the homes, the rainfall and the level of the ground water. The character of the soil has all to do with the safety of the pit privy, as far as the pollution of nearby wells is concerned. If the soil is sandy, it is stated that the distance between privy and well should not be less than fifty feet, better seventy-five or one hundred feet. In clay, coral or limestone formations, fissures and crevices may be present and may permit contamination of water supplies to take place even up to a half mile or more. It is safe to say that if the water supply of the homes is derived from shallow dug wells, and the soil is not sand, then the pit privy should not be countenanced. The construction of a water-tight vault for each home is out of the question, on account of poverty. It must be remembered that the wage earned by the laborer in the tropics does not mount high. From six to twenty-four cents per day is the usual earning.

Where pit privies are allowable they should be properly constructed. The pit should be of sufficient depth; it should be made proof against surface washing by having the earth banked about the edge; the top should be well closed with a portable cover, so as to prevent the egress and ingress of flies. The fly question is a very important one in many parts of the tropics.

The water supply of most of the rural homes is derived from shallow wells with non-protected openings. A few homes, especially those of Europeans, may get their drinking water by collecting it in tanks from the roofs. The level of the ground water of many places near the sea and rivers is apt to be near the surface of the ground. A torrential rain may bring the level to or above the surface, hence surface flushing from privy to well is not uncommon. The rainfall is apt to be very great in the inhabited tropics.

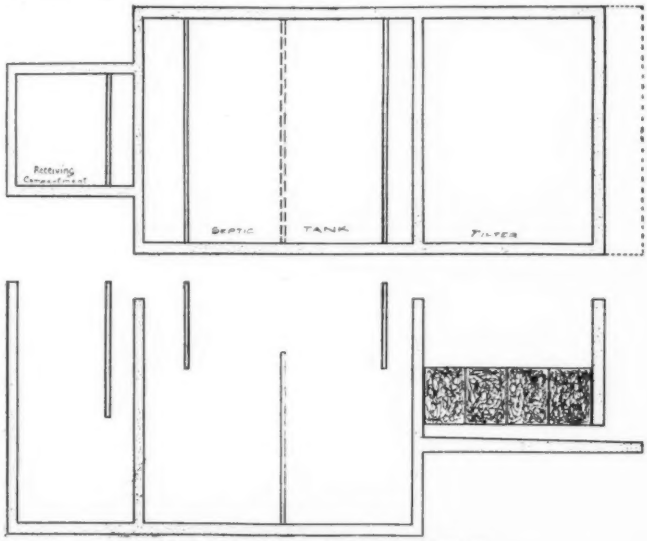
If a pit privy is out of the question, the next consideration is the pail or bucket arrangement. This method may be made to approach

the ideal in the excreta disposal in the rural tropics. At least, it may be made to be practicable and efficient.

A pail privy must be well constructed and fly-proof. The receptacle must be capable of removal without danger of contaminating the surrounding soil or the building, and preferably without entering the privy. The receptacles must so fit that there is no chance of the excreta not entering.

How are the contents to be disposed of? Is the responsibility to rest solely upon the householder? To be practical and efficient, the householder should not be held responsible for the emptying of the receptacles. In places where the householder must perform this work we know that it is not efficiently done. He should, however, be held for the proper maintenance and use of the privy. The local authorities or government should supervise the removal of excreta from the privy to the place of disposal. Prisoners may be employed for this work. It should be done in daylight. Darkness covers a multitude of shortcomings. The pails or receptacles should be uniform. The used pail should be replaced daily with an empty one.

The treatment of the contents of the pails is varied. The excreta may be buried in certain selected sites. If the locality is coastal,



PLAN AND ELEVATION OF SEPTIC TANK.
Filter material may be coral blocks, as shown, or sand.

the excreta may be dumped out at sea from a punt or scow. The employment of a building overhanging the sea is not to be advised. Incineration of the excreta is a most excellent means, but may be expensive, as a certain amount of fuel is necessary. The excrement may be used as fertilizer, but must first be treated so as to render it innocuous. In the Asiatic Orient the employment of human feces as fertilizer is rather common and profitable. The septic tanks treatment of the excreta is probably the best and safest method. If this means is used, neither dry earth nor chemical should be added to the excreta at the privy.

We will not enter the subject of the construction of a septic tank. After the pails are emptied they must be thoroughly cleaned and burned out. A little kerosene is sprinkled inside the tins and then lighted. After burning, the inside of the pails should be lime-washed.

In field-work on estates and plantations the excreta of the laborers should be prevented from polluting the soil by the use of portable "pail-in-box" latrines similar to that illustrated above, but provided with a carrying attachment.

Before real satisfactory public health work can be done in the tropics the question of soil-pollution prevention and proper disposal of human feces must be solved. It is of equal importance to those of water supply and mosquito eradication.

PITUITRIN: ITS VALUE IN POST-OPERATIVE TREATMENT.*

By NEVILLE DAVIS, M. D., AND ROBERT OWENS, M. D., Dalhart, Texas.

Next to the fear of the anesthetic, nothing deters so many patients from submitting to abdominal operations as the suffering of the first forty-eight hours after waking up. What is it that inspires our patients with such dread of these forty-eight post-operative hours, that they are willing to become invalids rather than undergo the operation with its attendant comforts?

It is, firstly, nausea and vomiting; and, secondly, gas pains.

What can we do to banish these bogeys from the minds of our patients?

This subject is, to my mind, second in importance only to the actual technical knowledge of the operative procedure itself. Yet

* Read before the Potter County, Texas, Medical Society, by Dr. Robert Owens.

it is so overlooked as to sink into relative insignificance in the minds of the large majority of surgeons.

To avoid post-operative nausea and vomiting many devices have been evolved. Among these are numbered expertness on the part of the anesthetist in administering the anesthetic; hypodermic injection of morphin and atropin before the operation; washing out the stomach before the patient leaves the table; the use of various anesthetics, separately or in combination, as the open ether method, gas and oxygen, ethyl chloride, chloroform and open ether in sequence. The success that attends the use of these is variable and depends largely upon the individual anesthetist. I do not propose to occupy your time with a discussion of this nightmare, because it has largely been eliminated by the employment in different combinations of the methods I have mentioned. But I do want to direct your attention to some of the work which Dr. Neville Davis and I have done at our hospital at Dalhart.

This work is a continuation of a series of cases which Dr. Davis started in Australia, before coming to this country, and by means of our experiments we have been able to satisfy our patients and ourselves that the bogey of post-operative gas pains is largely exaggerated. You all have had brought to your notice Crile's theory of anoci-association, and the plan by which he hopes to alleviate post-operative suffering by the use of local anesthetics. Many of you have undoubtedly seen the Mayos at work, and their skillful handling of viscera with a view to avoiding traumatism and paresis of the muscular coats of these organs. Both of these methods have unquestionably given wonderful results in the way of diminishing post-operative suffering, but few of us lay claim to the skill of these masters. Personally, we recognize our own shortcomings in the delicacy of touch of a Mayo, and we have been unable to obtain the results of Crile.

We have found, however, that the bogey of post-operative gas pains can be laid to rest by a much-discussed and abused drug, viz.: pituitrin. Our investigation with this drug along these lines was purely accidental, and only confirms once again the old-time adage that "out of evil may come much good."

When pituitrin first came into prominence for the shortening of labor, Dr. Davis noticed in one unfortunate case that it produced a very marked contraction of the unstriped muscle of the uterus, and again, a few days later, that intestinal colic was produced when it

was administered to control menorrhagia. From this starting point he began to inquire whether it would not act upon the unstriped muscle of the intestinal canal, and found, upon conducting a series of experiments with normal healthy individuals, that pituitrin, given hypodermically, 1 c. c. every four hours, caused cramping in the abdomen and frequency of defecation. Dr. Davis then determined to see if this action were present when the intestine and abdomen were not in a normal condition. He began to use pituitrin hypodermically in all abdominal operations, and the result has been completely satisfactory to us. The individuals did not experience intestinal cramping, but the intestines were saved from that state of paresis which so commonly takes place after handling. It is this paresis which produces the accumulation of gas in the intestines, because of the failure of the normal peristaltic action of the bowel to propel it forward.

The method of using pituitrin was as follows: Morphin, gr. $\frac{1}{6}$, and atropin, gr. $\frac{1}{180}$, were given hypodermically one hour before operation. Immediately following the operation and before the patient was returned to bed 1 c. c. of pituitrin was given hypodermically. This dose was repeated two hours later; $\frac{1}{2}$ c. c. given four hours after the operation and another $\frac{1}{2}$ c. c. eight hours after the operation. Unless the case was a very extensive one, involving considerable handling of the abdominal viscera, no more was given, but, in these severe operations, doses of $\frac{1}{2}$ c. c. were continued every four hours until twenty-four hours after the operation. Twenty-four hours after the operation three grains of calomel were given one-half grain every half hour, and this was followed by a saline purgative to prevent cramping. Our series of experiments extended over 126 consecutive cases in which the abdomen was opened. We refrained from selecting special cases, in order that our results might have a general application. To avoid actual colic, we gave an enema four hours after the saline purge.

We arbitrarily divided our series of 126 cases into two groups: Group 1, cases in which there was not any septic peritonitis at the time of operation; Group 2, cases in which septic peritonitis was present at the time of operation.

The first group contained 104 cases and the second group 22. We watched the effects of the pituitrin clinically, and our results are expressed in the following tables:

Table 1—Group 1. Non-Septic Cases. Total, 104.

	Cases.
Flatus passed during the first 24 hours after operation	91
Rise of temperature above 100° F. any time during the first 48 hours	7
Increase of pulse rate above 100 per minute any time in 48 hours	9
Gaseous distention of the abdomen so that dressing had to be loosened	6
Failure of bowels to act once in 36 hours	5

Table 2—Group 2. Septic Cases. Total, 22.

	Cases.
Flatus passed in 24 hours after operation	8
Rise of temperature above 100° F. any time in 48 hours	20
Increase of pulse rate above 100 per minute in 48 hours	18
Gaseous distention of the abdomen so that dressing had to be loosened	11
Failure of bowels to act once in 36 hours	9

The operation on the cases that comprised Group 1 were: Appendectomy, hysterectomy, salpingo-oöphorectomy, single or double; salpingectomy for ruptured extra-uterine pregnancy, gastro-enterostomy, strangulated hernia, intestinal obstruction, reduction of intussusception, cholecystotomy, cholecystectomy, supra-pubic cystotomy, lateral entero-anastomosis, and splenectomy. The operations performed on the patients constituting Group 2 were: Efficient drainage for ruptured appendix, appendiceal abscess, ruptured hydatid cyst of the liver, perforated gastric ulcer, perforated duodenal ulcer, rupture of a strangulated ovarian cyst, accidental rupture of gangrenous intestine during resection of bowel, ruptured gall-bladder, and ruptured pyosalpinx.

It will be manifest that our series was thoroughly representative of abdominal sections and that no attempt was made to achieve results at the expense of selection of cases. As up to the present there has been considerable difference in strength in the standardized products of pituitary gland of different manufacturers, a fact which has been amply brought out by Roth and by Hamilton and Rowe, and to provide uniformity and to eliminate the possible error that could have crept in from the use of different brands of pituitary extract of various manufacturers, we employed Parke, Davis & Co.'s standardized product entirely.

The mortality rate in the series was gratifying, there being four deaths among the cases in Group 1, or slightly less than 4 per cent, while there were six deaths in the cases of Group 2, or a rate of 27 per cent.

While we were conducting our series we met with nine cases of

eclampsia, one of which terminated fatally within ten minutes of the first seizure. In seven cases the first fit occurred before the onset of labor; in one case the convulsions began during labor, while in the other case the first convulsion took place after the birth of the child, but before delivery of the placenta. In all cases pituitrin was given along the lines previously outlined, except that its use was kept up for seventy-two to ninety-six hours. We noticed that the secretion of urine commenced earlier and was less scanty than in cases in our practice prior to these experiments.

As regards the use of pituitrin to shorten the time of labor, we want to say that we have long abandoned this drug for that purpose, as our experience has shown that it is as dangerous as ergot and should not be used until after the expulsion of the placenta, and then only to anticipate post-partum hemorrhage.

The conclusions drawn from our series of experiments are:

First. That pituitrin is a valuable drug in stimulating the muscular coat of the intestine after abdominal section in non-septic cases.

Second. That it is of decided assistance in preventing post-operative shock after abdominal section in non-septic cases, as evidenced by the lack of rise of temperature and pulse rate.

Third. That it had very little, if any, effect upon cases complicated with septic peritonitis, but our results in this group are inconclusive, on account of the small number of cases.

Fourth. That it stimulates the secretory action of the kidneys in cases of eclampsia.

Fifth. That it materially reduces the amount of post-operative suffering.

Gentlemen, I thank you for your attention in listening to this paper. Although our work has not produced any new method in surgical procedure, we feel that we are able to offer you a solution of the problem that confronts you in tiding your patients over the painful forty-eight hours following abdominal section.

DISEASES OF THE EYES IN CUBA, A TROPICAL COUNTRY.*

By DR. JUAN SANTOS FERNANDEZ, Havana, Cuba.

[Translated by A. M. McSHANE, M. D., Greenwood, Miss.]

In the Island of Cuba we find no record of scientific work until Havana was captured by the English in 1861, at which time the isolation from the rest of the world imposed by Spain on all of her colonies was shaken off.

In the last decade of the eighteenth century the Governor-General, Don Luis de las Caras y Arrigorri, created the patriotic society of the "Amigos del Pais." He also instituted the "Papel Periodico," which was the first exponent of the press in Cuba. He founded the "Casa de Beneficia y Maternidad," which was a colossal work for that time. Under the stimulus of the Governor-General, Dr. Romay, who wrote the first memoir on "Vomito negro" ("Black vomit," yellow fever), observed in the squadron of Aristizabal, which brought the disease from Mexico, occupied himself with the improvement of his country.

At the beginning of the nineteenth century Dr. Romay introduced vaccination into Cuba. He also opposed burials in churches, and his co-worker in this field, Bishop Espada, established the first cemetery outside of the city. Dr. Ambrosio-Gonzalez del Valle deserves to be remembered for his valuable labors as a hygienist. The mantle of Dr. Romay fell on the shoulders of Dr. Nicolas José Gutierrez, who adorned Cuban culture in the first half of the nineteenth century. He founded the Academy of Medical, Physical and Natural Sciences of Havana in 1861, which followed that of New York only by ten years.

In spite of the great advancement of medical sciences in general, ophthalmology in Cuba, just as in most other parts of the world, scarcely gave any sign of life. Only in certain scientific centers in Europe and the United States was the knowledge of the eye cultivated. The surgery of the eye was merely a branch of the general surgery, and so fell under the care of the general surgeon. The first notices of Cuban ophthalmology that appeared in foreign literature were due to an Italian physician and a French writer, Dr. Carron du Villards, who visited Cuba about the middle of the

*Contributed by Harvard School of Tropical Medicine. Should have been read before the School, but the author was recalled suddenly to Cuba.—EDS.

last century. This fact alone is noteworthy, for it required a good deal of courage to visit the home of yellow fever. Dr. Valli, of Pisa, Italy, paid for his temerity with his life, as did also Dr. Antommarchi, who was the physician to Napoleon I in St. Helena.* From Carron du Villard's publication we learn that diseases of the eye were at different times introduced into Cuba by the negro slaves from Africa, but it was not really trachoma, but other kinds of ophthalmia, that were due to the crowded condition in which the negroes lived in the small sailing vessels, without any attempt at hygiene. If trachoma ever were introduced at any time it did not thrive among the negroes, who lived in considerable numbers on the large sugar plantations. One reason why it did not thrive was because the owners of these plantations took extreme care of their costly chattels, for negro slaves cost from $500 to $1,000. Furthermore, the heat of the climate did not compel the subjects of eye disease to live closely, as they do in Egypt, where the contagion spreads in the home, but to live out in the open air, thus unwittingly adopting the most efficacious hygienic measure for combatting those diseases.

I do not admit the claim made by certain authorities that the negro is, in a measure, immune to trachoma, but the point has been as much discusssed as the belief that trachoma does not develop at high altitudes.

Although we do not have the precise germ of trachoma any more than we know that of yellow fever, we can adopt restrictive measures in the former disease just as in the latter.

In my numerous papers on the subject of trachoma, I have shown that the disease does not develop in the island, owing to the vigilance of the health officials at the various ports, especially Havana, and to the campaign of education carried on by the medical schools.

Some years back I published the only known clinical case of amaurosis due to yellow fever, in which an ophthalmoscopic examination was made. It will perhaps remain the only case of the sort to be recorded, because, thanks to the splendid work of the Rockefeller Institute, yellow fever bids fair to become as extinct as the dodo.

From the time of my arrival in Havana in 1875 I undertook to

* Dr. Antommarchi settled in New Orleans for a while after the death of Napoleon, who hated and distrusted his physician most heartily. He did not prosper in New Orleans, and we read the last chapter of his life in Dr. Fernandez's brief notice above.—NOTE OF TRANSLATOR.

determine whether the loss of sight in cases of malaria was due to the malaria itself or to the quinin with which the disease was treated. I must begin by saying that, at that time, the authors occupied themselves with very few manifestations of paludism; and of the disturbances of sight due to quinin there were only a few observations published by von Graefe, who, though dying prematurely, left no field of ophthalmology unexplored. I found myself face to face with a problem which I had to solve with the cases sent to me, and which were ascribed solely to paludism. The cases in which I found optic neuritis and retinal hemorrhage proper to malaria were the fewest, and were only affected with amblyopia. In cases of complete amaurosis I did not meet with optic neuritis or retinal hemorrhage, but, on the contrary, ischæmia of the papilla of the optic nerve. Cases of the first class got well in a few days; of those of the second class, some never did entirely regain vision, and the papilla terminated in atrophy. This last condition was not due to paludism, which, at that period, was confounded with various other infections, and, assuming them to be malarial, quinin was administered in such massive doses that the patients, if they recovered from the fever, remained blind, and even at the present day I occasionally treat patients from that epoch of more than forty years ago.

My writings on that subject served to call the attention of clinicians to the abuse of quinin, and to dissuade them from giving the drug in such large doses, which were unnecessary even when the patient really had malaria. A distinguished colleague, who had practiced medicine in Havana for twenty-five years, wrote to me that he had seen but few cases of amblyopia and amaurosis provoked by quinin. The reason is clear: the abuse of quinin had ceased in Cuba, and no more cases were seen.

In regard to the effect of tobacco on the sight, which had been discusssed by my teachers in Europe, I had to form a new criterion. Almost all eye patients coming to Paris from Cuba, which was the cradle of the tobacco industry, were supposed to be affected by it. In those that originated in Paris I afterwards had to modify the diagnosis. I changed what I had learned from my teachers concerning the effects of tobacco in disturbances of vision for some cases of atrophy of the papilla or optic nerve, due to other causes, were diagnosed as tobaccic or nicotinic amblyopia or amaurosis in Europe. In 1875 I began carefully to observe these cases, and

I became convinced that pure nicotinic amblyopia, without the intervention of alcohol, was easier to observe in Cuba than out of it, in spite of the fact that Havana tobacco was less injurious than other kinds, because of its smaller nicotine content. Hence, we can study the isolated action of tobacco on the eyes, since alcohol is abused only under certain circumstances, for example, during wartimes.

When I returned to my own country from Paris, in 1875, the events of the Paris Commune of 1871 were still fresh in the public memory, and it was then that the illustrious Galezowski set down the symptoms of the ocular disturbances due to alcohol. It suffices to take small doses of some alcoholic beverage every morning, fasting, in order quickly to affect the sight. I confirmed this when I returned to Cuba, which I found in a state of war. When this ended, the ocular disturbances due to alcohol steadily diminished, only to reappear on the resumption of hostilities, and they almost entirely ceased on the return of peace.

Affections of the lachrymal apparatus scarcely figure in the clinical statistics of Cuba. Such disorders are much less common there than in France or Spain. I attribute this to racial differences, and especially the negro race, whose nasal canal some anatomists supposed to be wider than that in the white race, and, therefore, not so easy to become the seat of a stricture. In 1901, at the Thirteenth International Medical Congress in Paris, I exhibited craniums of whites, blacks and mixed breeds, and I showed then that the former statement was correct, namely: that the nasal canal is wider in the pure negro race than in the white or mixed race. I also directed attention to the fact that this anatomical peculiarity could be utilized in medico-legal investigations. I am under obligations to Dr. J. A. Presno, of the Faculty of Medicine, for these anatomical specimens. This collection of skulls is still preserved in the Museum of Natural Sciences of Havana, where the above facts may be confirmed.

Another subject which I wish to touch upon is *hemeralopia*, which is not frequent, but is sometimes encountered in the clinics of Cuba. The first cases I observed were sailors from sailing ships, that had made the voyage from Buenos Aires to Havana with a cargo of *tasajo* (dried beef), or beef preserved with salt. This food was formerly used much more than at present, since it was the staple ration of the slaves, for it was proven to be the most

nutritious. I at first attributed the hemeralopia in these sailors to the general anemia due to a long voyage, but when I later observed hemeralopia in Cuba in farm laborers and other workmen exposed for many hours to a tropical sun I attributed it to the depressing action of the intense light which affects the retina, destroying the visual purple (erythropsine), which is consumed by light and is regenerated in darkness. This regeneration is retarded by anemia. I have confirmed this by observing persons suffering from hemeralopia effectively cured by the hypodermic injection of normal horse-serum. In the same way retinal asthenopia is produced in sponge fishermen in Babano, which I also attributed to the intense action of the sun and to the efforts of accommodation due to the bad position of the head which they adopt while working.

FRONTAL SINUS OPERATION (LOTHROP) PERFORMED UNDER LOCAL ANESTHESIA.*

By M. P. BOEBINGER, M. D., New Orleans.

The object of this paper is to report a case of pan-sinusitis in which all previous methods of treatment had failed and in which relief resulted from operation under local anesthesia. The case had been previously treated by Douglas puncture of the left antrum only and frequent washings without result. Later a Caldwell-Luc was done on the same antrum, with likewise negative result. When first seen by the writer a diagnosis of pan-sinusitis was made, and the opinion expressed by him that the antrum was simply acting as a reservoir for trouble higher up.

The diagnosis was made by observing the flow of pus on both sides, coming from above and below the middle turbinate, as well as pus upon the posterior wall of the pharynx. Trans-illumination showed darkness for both frontal sinuses and right maxillary. This diagnosis was further corroborated by the findings of Dr. Adolph Henriques upon X-ray examination. Only the application of cleansing agents was made until the date of operation, November 22, 1917.

On this date the case was prepared for frontal sinus operation under local anesthesia, a full breakfast being given and morphin sulph., gr. ¼, being injected fifteen minutes before operation.

* Read before the Orleans Parish Medical Society, January 28, 1918. [Received for publication February 11, 1918.—EDS.]

Technic: Pledgets of cotton were introduced into each nasal chamber, being first soaked with cocain hydrochlor., 10 per cent solution, and adrenalin chloride, 1 to 1,000, the excess being expressed. After an interval of fifteen minutes the cotton was removed; the agger-nasi region was then rubbed with swab moistened with the same solution. This swabbing was repeated a few times, the mucosa about the frontal openings, as well as the middle turbinate and the anterior wall of the sphenoid, being similarly anesthetized. A Mosher operation on the ethmoid labyrinth, modified so as to include the removal of the middle turbinate, was now done on the left side, including the removal of the anterior wall of the sphenoid.

The upper septum was next well swabbed with cocain and adrenalin solution. After an interval of ten minutes, in order to block off the nerve supply, one drachm of novocain solution of ¼ per cent strength was injected high up into the septum just beneath the frontal sinus floor.

The skin and unshaven eyebrow were cleansed with alcohol and iodin prior to anesthesia. One drachm of ¼ per cent solution of novocain was injected beneath the skin of the left eyebrow, about one-quarter inch from its mesial margin, then deeper into the superficial tissue, and finally beneath the periosteum. The supraorbital, supratrochlear, infratrochlear branches were then injected. The entire anesthesia about the frontal sinus externally was done with a single skin puncture, with a two-inch needle, withdrawing the needle just far enough to inject each succeeding area, but not withdrawing it entirely out of the skin.

Incision: A one-inch curved incision was made through the left eyebrow, beginning at the inner margin of the eyebrow and closely following its curve, avoiding injury to the supraorbital nerve, which might result in para-esthesia, or numbness, along its course. The incision was deepened to reach the bone. A Jansen mastoid retractor was placed after elevation of the periosteum. The reason for using this particular retractor, or any mastoid retractor, for that matter, was to secure a bloodless field—a point noted by the writer on former occasions, and which could not be produced by the use of the ordinary eye or hand retractor. Besides this, the aid of an additional assistant is rendered unnecessary, as well as avoiding the unnecessary use of instruments in an already crowded small field of operation. A very small gouge was used to make the

first opening into the sinus at a point corresponding to the usual position of the interfrontal septum, thus rendering later access to the interfrontal septum more easy. The opening was enlarged by means of up-cutting forceps, to an oval about three-quarters inch long at its long diameter. Upon inspection through this opening, polypoid tissue was seen to fill the entire sinus.

A point to be noted here is that, whereas ordinarily it is usual and necessary to apply cocain to the mucosa of a sinus operated upon under local anesthesia, as, for example, in a Caldwell-Luc operation, in this case it was unnecessary, on account of the successful nerve-blocking. The mucous membrane was curetted without the least evidence of pain on the part of the patient. The next step was to break through the interfrontal septum and enlarge the opening by means of gouge and burr. Following this, the same procedure as on the left sinus was adopted—that is, currettement. Attention was next directed to breaking through the floor of the frontal sinuses and the perpendicular plate of the ethmoid by means of gouge, burrs and rasp (the latter being of the writer's design). A large opening was thus produced leading into the upper nasal cavity, constituting an easy means of approach for subsequent treatment. No post-nasal pack was used, as is customary in a frontal sinus operation under general anesthesia, as the patient was awake and the bleeding from the mucosa was easily controlled by the suction apparatus. The incision was closed as usual, no pack being used for drainage. A tight compress head bandage was applied. The patient was sent back to his room ready for his noonday meal, which he ate with apparently no ill after-effect, no nausea being experienced. In twenty-four hours the outer dressing was removed, as it felt a little tight. On the second day the patient was out in the rolling-chair, as he showed no temperature, nor did any develop subsequently. On the fifth day the sutures were removed, the incision healing by first intention.

In summarizing, the following points are to be noted:

1. No pain was felt by patient at any time during operation.
2. No post-operative nausea was experienced.
3. Patient was up and about earlier than with general anesthesia.
4. On the part of the operator, it was unnecessary to cocainize the frontal sinus mucosa.
5. No post-nasal pack was necessary—a matter of increased comfort for the patient and lessening the danger of middle-ear disease from retained secretion and irritation of the gauze.

6. There was very little reaction about the eyelid.

To the writer's knowledge, this is the first case of frontal sinus operation done under local anesthesia to be reported from this section.

DISCUSSION.

Dr. Dupuy: As I listened to the reading of the paper I could not decide which deserved the greater meed of praise, the art of the surgeon or the Spartan courage of the patient, for the operation is one of the "last words" in frontal sinus surgery and is quite extensive. Doing it under local anesthesia without pain is quite an advancement, and we congratulate the Doctor on the first successful one recorded. I must admit, however, that I fear such an operation can be limited to only a few selective subjects—the Spartan kind. I am willing to try it, however. Dr. Boebinger has failed to emphasize that he has made a very practical contribution in the form of rasps to the instrumentation of the Lothrop operation. The Boebinger rasps are ideal for the work.

Dr. Dimitry: I would like to ask this question: Is a case of frontal sinusitis ever cured by operation? Is the process of drainage sufficient to cure the condition while the diseased mucosa is still left intact? What is the advantage of a local anesthetic from a general anesthesia in these cases?

Dr. Boebinger (in closing): I wish to thank the gentlemen very much for the discussions on my paper, and wish to say that I am indebted to Dr. Dupuy, my chief, for the many opportunities offered me. My object in presenting the paper was to impress upon operators the possibility of local anesthesia in these cases, and not to offer anything new concerning the technic of frontal sinus operation.

In answer to Dr. Dimitry, I do think that we can cure cases of frontal sinusitis. I believe that this will be corroborated by my confrères who are doing frontal sinus operations. I believe also that general anesthesia is objectionable for general reasons, as you expose the patient to ether pneumonia. It is also objectionable where the patient has heart lesion, nephritis, and where ether is contraindicated, and in my opinion it is much better to have your patient comfortable after operation and free from nausea, vomiting, etc. Also, these patients are more or less subject to strangulation by blood flowing into the larynx, which will be especially dangerous when a general anesthetic is used.

RESUMÉ OF HEALTH CONDITIONS OF A MODERN DEPARTMENT STORE.*

By EMILE BLOCH, M. D., New Orleans.

The diseased conditions met with in a modern department store, where many individuals are employed, show a wide variation. The problem encountered in compiling statistics is due to the lack of previous education of the employees on medical lines and the unappreciative value of a complete physical examination.

* Read before the Orleans Parish Medical Society, January 28, 1918. [Received for publication February 11, 1918.—EDS.]

It is a difficult matter to make a female in a department store undergo as complete a physical examination as a male; they object to the least exposure, even so far as a chest examination; they imagine you are endeavoring to pry into their personal affairs, and some look on it as ridiculous to be subjected to such when they are not sick.

Nevertheless, even with such an unfamiliar undertaking, the adversaries have been few and far between.

With the number of employees of Maison Blanche Company, ranging between 1,000 and 1,250 monthly, and having adequately-arranged medical facilities, the conditions met with are more readily brought to hand than in former days.

In passing, I may say that the medical facilities, which include a small hospital ward of six beds, attended by a competent trained nurse, are open to any emergency that may arise to a customer or an employee when in the establishment. Such an arrangement does not exist in any other Southern department store, and no more elaborate arrangement may be found in any establishment in the country.

The following report will show the number of patients treated between September 1, 1916, and November 12, 1917, in Maison Blanche Company, New Orleans, La.:

Number of individual patients	869
Office consultations (medical and surgical)	2,986
Number of major operations	17
Number of minor operations	137
Number of male consultants	836
Number of female consultants	1,938
Number of home and hospital visits	984
Physical examination of new members of association	342

(Employees required to be employed two months before allowed to become a member.) Of the number examined, 85 had negative examinations—*i. e.*, have not developed any disease.

Report of the nurse in charge (Miss N. Jarvis) from April 20, 1917, to November 12, 1917:

Medical treatment	1,018
Surgical treatment	543
Minor operations	36
Total	1,597
Ward patients (employees)	296
Customers in ward from April 3, 1917, to November 10, 1917	69

The diseased conditions, and number, are seen in the following table.

Gastro-Intestinal:

Auto-intoxication	134
Chronic constipation	34
Dysentery	—
Mechanical cause	7
Gastritis (alcoholic)	1
Gastric ulcer	2
Appendicitis	14
Operated	12
Recovered	11
Died	1
Typhoid fever	1
Oxyuris (pin-worm)	1

Herniæ:

Inguinal	Indirect, left	3
	Indirect, right	1
	Direct, right	1
Ventral, post-operative		1
Umbilical		2

Respiratory Diseases:

Acute bronchitis	50
La grippe	17
Influenza	—
Acute coryza	18
Naso-pharyngitis	21
Trachitis	5
Pulmonary tuberculosis	4
Chronic bronchiectasis	1
Epistaxis	2
Tonsillitis	19
Pleurisy	3
Hay fever	1
Diphtheria	3

Gynecological:

Retroverted uterus	4
Salpingo-oöphoritis	5
(Pan-hysterectomy)	1
Endometritis	15
Vaginitis	5
Metro- and menorrhagia from ovarian insufficiency	1
Dysmenorrhea	58
Amenorrhea	3
Lacerated perineum	1
Menopause	1
Hypertrophied cervix	1
Lacerated cervix	2
Uterine polypus (removed)	1
Submucous fibroid (removed vaginally)	1

Infections (Including Furuncles and Carbuncles):

Finger	27	Abdominal wall	2
Hand	3	Face (cheek)	5
Forearm	4	Nose	3
Arm	1	Neck (carbuncle)	2
Wrist	1	Eye (stye)	3
Foot	1	Gums	4
Leg	1	Frontal sinus	2
Knee (skin)	1	Sphenoidal sinus	1
Thigh	1	Maxillary antrum	3
Buttocks	1		

Lacerated and Incised Wounds:

Finger	17	Foot	2
Thumb	3	Leg	2
Hand	7	Face (cheek)	1
Wrist	1	Chin	1
Arm	5		

Contusions:

Foot	5	Forearm	4
Leg	1	Elbow	3
Thigh	1	Arm	1
Fingers	8	Right shoulder	1
Thumb	4	Orbit	1
Wrist	4	Nose	1
Hand	1	Forehead	2

Punctured Wounds:

Nail puncture of foot	4	Finger (needles)	2

Sprains:

Shoulder	1	Thumb	3
Wrist	2	Ankle	8
Hand	1	Knee	1

Myalgia:

Torticollis	24	Lumbago	9

Arthritis:

Acute rheumatic fever; multiple arthritis	1	Chronic arthritis of knee	1

Blood Diseases:

Malaria: Tertian	3	Secondary anemia	20
Malaria: Estivo-autumna	1	Myelogenic leukemia	1

Papilloma (Warts).

Finger	4	Foot	2
Hand	4	Scalp	1
General	1	Nose	1

Ear Conditions:

Otitis media (acute)	6	Otitis, external (acute)	2
Otitis media (chronic)	1	Otitis, cerumen (ear wax)	4

Mouth Conditions:

Toothache	20	Stomatitis	1
Glossitis	5	Pyorrhea alveolaris	1
Epulis	1		

Eye Condition:

Strabismus	3	Conjunctivitis	5

Skin Diseases:

Pityriasis rosea	1	Scabies	1
Toxic erythema	2	Herpes: zoster (of face)	1
Pompholyx	3	Febrilis (fever blisters)	5
Impetigo	2	Acne	7
Poison ivy	1		

Bites:

Dog:	Face	1	Human:	Finger	1
	Thigh	1	Insect:	Finger	1
	Finger	1			

Foreign Bodies:

Eye	4	Finger (splinters)	3
Foot	1	Stomach (pin)	1
Hand (glass)	2		

Headaches:

From eye conditions	6

Headaches from gastro-intestinal causes, number not listed, as they were as numerous as said causes.

Burns (All of First and Second Degree):

Wrist	1	Leg	1
Hand	3	Foot	2
Finger	4	Forehead	1
Arm	1	Face (entire)	1
Elbow	2		

Thyroid Gland (Enlargement):

Goiter of adolescence	9	Pathological: Hypertrophic	1
Pathological: Cystic calcified	1		

Genito-Urinary Diseases:

Specific acute urethritis	5	Balanitis	1
Chronic urethritis	1	Epididymitis	2
Urinary cystitis	2	Paraphimosis	1
Hypertrophied prostate	1		

Rectal Diseases.

Anal fissure	1	Hemorrhoids	5

Adenitis:

Axillary	2	Cervical	1
Inguinal	2		

Arterial and Cardiac Diseases:

Arterio-sclerosis	3	Mitral regurgitation	2
Arterial hypertension	5	Apoplexy (cerebral hemorrhage)	1
Aortic regurgitation	3	Angioma (general)	1

Veins:

Varicose veins of leg	2	Varicocele	3

Nephritis:

Acute parenchymatous	1	Idiopathic	1
Chronic diffuse	1		

Neuralgia:

Facial	13	Hand	1

Cysts:

Sebaceous: General	2	Sebaceous: Breast	1
Chest	1	Tendon (ganglion)	—
Face	4	Hand	1

Curvature of Spine:

Lardosis	1	Kyphosis	1

Fractures:

Phalanx	—	Old fracture of ascending ramus of ischium	1
Toe	1		

Nervous Diseases:

Multiple sclerosis	1	Neurasthenia and hysteria	72
Traumatic neurosis	1		
Ingrown toe nails	3	Coccygeal pain	1
Obesity	2	**Tubercular hip**	1
Syphilis, general	7		

Gastro-Intestinal: This condition I have divided under three headings: Auto-intoxication, chronic constipation, and dysentery.

Under auto-intoxication, the symptoms have varied from simple ones accompanying gastritis, following overeating, to severe toxic conditions, with headaches, severe abdominal pains, constipation or diarrhea, nausea and vomiting. Those classed as constipation are chronic conditions; the number listed does not give a correct conception, the regulation of bowel movement in people of such occupation being the foremost factor, though the diet and posture also have some effect. In the cases of dysentery, with diarrhea, as the foremost symptom, food (classed as mechanical) was the cause. Examination of feces for ova and parasites proved negative. Both cases of gastric ulcer were operated by other surgeons; one died following an anterior gastro-enterostomy, the other has completely recovered, following a posterior gastro-enterostomy.

Appendicitis: The number of cases of appendicitis were fourteen. Thirteen were chronic cases, with acute exacerbations. One was a gangrenous appendicitis accompanying a case of myelogenous leukemia. Twelve cases were operated, with one death.

There is just one point which I wish to emphasize—that is, in dealing with so many female patients, ranging in ages from fourteen years up, who suffer from dysmenorrhea due to fibrosis of the ovary and its capsule, proven at the operating table, and also the number of so-called "bellyaches," it was a difficult matter at times not to make a diagnosis of appendicitis, though with palliative treatment of enemata and careful watching and no purgative, you are able to clear the diagnosis. These are the cases in which temperature and blood pictures in the first twenty-four hours give only slight additional information.

Herniæ: Left, 2; right, 3. Indirect inguinal herniæ operated; all cured. One left indirect and 1 right direct not operated.

Ventral, post-operative, following right rectus incision for appendicitis, operated; cured.

Umbilical herniæ, very small, not operated.

Respiratory Diseases: Acute coryza, acute naso-pharyngitis and acute bronchitis are considered as commmon ailments where large numbers of people are in such close proximity to each other as in department stores and the condition so contagious. Though I have classified la grippe separately, the offending organism in the majority of these conditions is due to the Pfeiffer bacillus. Also, with the onset of these conditions, the sinuses, frontal, sphenoidal and maxillary antrum must not be overlooked, as may be noticed under the heading of infections.

Pulmonary Tuberculosis: After examining several hundred employees, only four cases of pulmonary tuberculosis have been found—unfortunately for those recognized—but they have found other employment.

Chronic Bronchiectasis: This case was given careful consideration and differentiated from pulmonary tuberculosis. Physical examination showed many cavities, especially in the left lung. No T. B. C. found in several microscopic examinations by others and myself.

Tonsillitis: Again this is a condition very frequently met. The number of enlarged tonsils far exceeds those recorded, and again lies the disputed question whether they should be removed or not.

Diphtheria (Laryngeal): All cases confined by culture and given 10,000 units of antitoxin with good results.

Gynecological Conditions: The gynecological conditions were of slight variation from the usual. I wish only to discuss two conditions—*i. e.*, dysmenorrhea and metro- and menorrhagia, due to ovarian insufficiency. As you see, the cases of dysmenorrhea are many. Constitutional causes, as anemia, etc., were the foremost. These cases responded readily to tonics of arsenic, iron, etc. Other cases did not respond to treatment, and, examination being negative, tended to make me attribute the cause to ovarian fibrosis, as so frequently seen when laparotomized for appendicitis.

Metro- and menorrhagia due to ovarian insufficiency. This case is a girl of twenty-two years, unmarried, had persistent uterine hemorrhages. The use of serum, calcium salts, failed; ovarian

extract, hormotone checked it temporarily. Bi-manual examination revealed nothing abnormal. Uterine scrapings were negative. Laparotomy showed uterus in good position, tubes negative, ovaries very small, capsule thickened. At present patient is being treated with radium, with encouraging progress.

Infections: Of twenty-seven infected fingers, two were deep-seated of terminal phalanx, which showed only one cardinal sign of inflammation—*i. e.,* pain (on pressure). In both cases, crescentic incisions over the tops of the fingers near nail, as recommended by Kanvel, were used with perfect results. Again, the number of sinus infections are noticed, which accounted for patient's respiratory trouble. With proper reference the condition has been rectified.

Lacerated and Incised Wounds; Contusions and Sprains: There is nothing out of the ordinary to be said on these subjects.

Myalgia: The preponderance of stiff-necks is probably due to exposure after leaving a warm store.

Arthritis: The case of acute rheumatic fever has persisted over four months. Several complete physical examinations, every laboratory method, several consultations, X-ray plates of joints, innumerable therapeutic methods, including vaccine-therapy and inability to find the primary focus, has caused the case to be long-drawn-out. Temperature persisted for three months. She is slowly recovering on alkaline and tonic medication.

Blood Diseases: The only blood condition which I wish to dwell upon is anemia. Comparatively speaking, twenty cases are very few, as store-girls have always been considered to be subject to anemia and chlorosis. All diagnoses have been based on hemoglobin readings.

Ear and Mouth Complaints: These small ailments of earache and toothache (from decayed teeth) are every-day matters for the nurse to handle. They are relieved and referred to proper authority.

Headaches: True, this is a symptom rather than a disease, but, it being such a common occurrence, it needs thorough investigation. It is so common that at the onset of a headache an employee readily goes to the nurse in charge for aspirin. We have tried our utmost to discourage such practice and endeavor to get at the fundamental cause. We have had some gratifying results by finding eye trouble and intestinal causes as the primary factors.

Thyroid Glands: In the course of the routine examination the number of goiters of adolescence in girls of ages ranging from four-

teen to twenty years are noticeable. It becomes interesting to see the effects of menstruation and dissipation on the size of the gland. It is also necessary to keep these cases under observation, to see if they will subside or become pathological. These patients, as a rule, are very nervous and high-strung. One of the pathological goiters which I have reference to has undergone calcification and three distinct lobes are palpable. The patient also suffers from menorrhagia, whether any connection from glandular secretion I am unable to say. Patient refuses operation.

Arterial Hypertension: By estimating the blood pressure of adults in the employ, especially the older ones, we have been able to advise some as to their arterial tension. True, high blood pressure for some individuals is compatible with their general circulation, but when it becomes 200 m. m. or more it is time to take precautions.

Cardiac Disease: Of the three aortitc regurgitations, two have been anemic murmurs. The other aortic and two mitral murmurs were pathological, but the heart was well compensated.

Angioma: This case was one of general distribution in connection with the general distribution of sebaceous cysts and papilloma.

Nephritis: Of the nephritis, the case of idiopathic origin is of considerable interest. The case history is as follows:

Mr. L. H., age 20; occupation, chauffeur; complaint, none. Cause of consultation, rejection from benevolent association due to presence of albumen in the urine. Past history negative; family history negative; general history negative. Habits: Used tobacco moderately, alcohol (beer) moderately. Present illness. Duration, unknown until one week previous to consultation, when patient was rejected from a benevolent association. He feels healthy in every respect. Physical examination: Heart and lungs negative upon palpation, percussion and auscultation; liver negative on palpation and percussion; spleen not palpable; kidneys palpable, but no abnormalities. Glands: Cervical, epitrochlear and inguinal; palpable, but not enlarged. Wassermann and Tcherno, negative.

September 5, 1917.—Urine, albumen present; negative for sugar; casts, red blood cells and pus cells. On September 11, 1917, and September 14, 1917.

September 21, 1917.—Patient ordered a meat-free diet and no liquors.

October 10, 1917.—No albumen in morning urine; noon urine, 24 per cent albumen.

October 12, 1917.—Discontinued eating eggs, which patient ate daily while at work.

October 13, 1917.—No albumen in morning or in noon specimen of urine.

October 15, 1917.—Allowed to eat eggs (two daily).

October 25, 1917.—No albumen in morning or noon specimen.

October 30, 1917.—Allowed to eat meats. No albumen in morning or noon specimen. Allowed to use alcohol (beer) moderately.
November 2, 1917.—Urine showed traces of albumen; no casts.
Patient never discontinued work.
Diagnosis—Idiopathic nephritis.

Nervous Diseases: Under the heading of nervous diseases, hysterical and neurasthenic individuals are many. Such is to be expected in such an establishment, with so many female employees. Gastro-intestinal disturbances have been found to be a predisposing cause in many cases, but in others the psychic element is the only condition to be found. A diagnosis of hysteria-neurasthenia is a broad assertion, and should never be made before a thorough investigation into the case, but, notwithstanding, in this class of practice these cases are predominant.

REPORT OF A CASE OF PRIMARY INFECTION OF THE SCROTUM BY THE GONOCOCCUS.*

By P. JORDA KAHLE, M. D., New Orleans.

Whether or not cases of primary infection through the skin, such as will be described here, have been reported before, I have been unable to determine, as the time necessary for searching the literature was lacking. However, even if such cases have been reported, I feel that the condition is uncommon enough to be of interest.

We know that the gonococcus can be found elsewhere than in the mucosa of the genito-urinary tract, or as the infecting organism in infections of the rectum and of the conjunctiva, as evidenced by the invasion of other tissues in the form of metastatic abscesses of the skin or of the muscles. Again, we have this organism carried by the blood-streams to almost every part of the body and giving rise to such complications as inflammations of the joints, of the bursæ, of the tendon sheaths, of the muscles, of the pleura, the periosteum, the parotid gland, the iris, the endocardium, and the pericardium. Some authorities claim even that the meninges can be involved. In all of these conditions there is to be found a focus of infection somewhere along the genito-urinary tract and the condition is secondary to it.

It is generally conceded that the unbroken skin cannot be con-

* Read before the Orleans Parish Medical Society, January 28, 1918. [Received for publication February 11, 1918.—EDS.]

taminated by the gonococcus and that the squamous type of epithelium offers resistance to gonorrheal infection. The mucosa of the preputial cavity, even, is seldom affected, and, when so, only mildly and in conjunction with an inflammation of the urethra. In such cases treated by me there was only one in which there was no apparent communication between the infected area and the urethra. This case, however, was not free from a gonococcal infection of the urethra, and the small abscess may have been of a metastatic nature. In the case reported to-night, however, it was impossible to demonstrate the gonococcus anywhere except in the lesion for which the patient applied for treatment. For that reason, it appears that we are justified in considering it a case of primary gonorrheal infection of the scrotum.

Mr. E. H. G., age 30; married; residence, Mobile, Ala.; occupation, traveling and clerical.

Past History: Had gonorrhea three years ago. During this attack he had arthritis. A little over a year ago he had another attack of gonorrhea, which lasted three months, and was unattended by any complications. The period of incubation was, as nearly as the patient can remember, about five days. Patient denies syphilis or chancroids. Except for yellow fever, the patient has never been sick.

Family History: There is no cancer in the family. Except for one sister, who died of tuberculosis, there are no other cases of this disease in the family.

Present Complaint. There is a sore, which "began eleven weeks ago as a pimple on the bag, at the root of a hair. From this sore there was some corruption which ran out. Gradually the sore spread into the bag and formed a lump." He had been exposed to infection ten days before this condition was noticed. There has been no urethral discharge for at least one year, and, as far as he knows, his wife has no signs of infection. He has had no intercourse with his wife in four months. He has been told that he had a chancre of the scrotum and wants to "be examined and advised." Since being told of his having a chancre he has had "some discomfort in the throat." He has had no temperature, headaches or pains of any kind.

Examination: Patient well nourished and apparently in good health. Throat, skin and lymphatic system negative. Penis normal. No discharge from the urethra. Testicles, epididymes and cords normal. The scrotum, left side, normal; the right side shows a small opening about an inch from the peno-scrotal angle and about an inch and a half from the raphe. From this opening there exudes a scanty secretion, which can be increased on pressure. On palpation there is a large fibrous or sclerotic mass about one and a half by one by three-fourths of an inch in size. This mass is definitely circumscribed, is freely movable in the scrotum, and does not have any apparent communication with the urethra. On the other hand, it is connected and communicates with the surface of the scrotal skin by a band of tissue of the same fibrous or sclerotic consistency. By pressure on the mass a drop of creamy pus can be forced out. Smears made from this secretion show pus and a few Gram negative

diplococci, intracellular. The diplococci were typical of gonococci as to size, form, grouping and staining properties. In spite of a prolonged search for other organisms we were unable to find them, either by simple or by special stains.

As there was no urethral discharge, and the urine voided in two glasses was clear, except for a little mucus, it was centrifuged. The sediment showed a few leucocytes, some mucus, a few colon bacilli, diphtheroids and a few Gram positive cocci.

The prostate and vesicles were negative per rectum. After washing out the urethra, anteriorly and posteriorly, the prostate and the vesicles were massaged and the secretion expressed was examined. Except for a few leucocytes the secretion was negative for abnormal elements. No bacteria could be found after a prolonged search.

A No. 26 F. sound was then introduced into the bladder, meeting with no obstruction and causing no inconvenience to the patient. Careful palpation over the sound failed to reveal any fibrous tissue or palpable follicles. The area near the peno-scrotal angle was specially examined.

Cultures from the scrotum were made on blood serum and on plain agar. From these cultures we obtained "a few colonies of staphylococcus aureus and several colonies of a Gram positive spore-bearing bacillus. Both were probably contaminators." We were unable to recover from any of the cultures the diplococcus found in the pus from the scrotum by smears.

Blood taken from the median basilic was submitted to the Wassermann test and to the complement fixation test for gonorrhea. The Wassermann reaction was negative. The complement fixation test for gonorrhea was also negative.

Further observations, as well as a dissection of the scrotal mass, were contemplated, but unfortunately the patient left town before this could be done.

After examining the facts in this case we feel justified in considering it a case of primary infection of the scrotum for the following reasons:

First—The History. Had this condition been a metastatic one it would hardly have begun in the skin at the root of a hair and extended into the scrotum. Rather the reverse would have been true. It would have begun in or under the skin and would have ruptured outside subsequently. Then, again, it would be a peculiar coincidence that this condition should have arisen ten days after illicit intercourse and not sooner or later.

Second. Were this condition metastatic, with a focus in the urethra, or were it an exudate or sclerosis of the subjacent connective tissue as a result of some communication from a focus in the urethra, this communication in all probability could have been made out, or the centrifuged urine would have shown the same organism as found in the pus from the mass in the scrotum.

Third. Were the condition metastatic from a focus in the prostate or the vesicles, we should have found pus and bacteria in the secretions from these organs. It is not claimed, to be sure, that two negative examinations, such as were done in this case, are proof conclusive that the organs in question are free from infection; but, in conjunction with other facts, such, for instance, as the non-recurrence of the gonorrhea in over one year, in spite of intercourse and the use of alcohol, and the failure to infect the wife, following frequent intercourse, we feel that we have strong presumptive evidence that these organs are free from infection.

Fourth. The complement fixation test for gonorrhea was negative. As this test is, if anything, oversensitive because of the nature of the antigen used, a negative reaction seems to be of more significance and would indicate no recent or present gonorrhea, except such as might be local and which had not yet caused any resistance on the part of the patient. Again, should this condition have been metastatic, we would have to assume, as there was no communication with the urethra, that the blood current had conveyed the gonococcus. In such a case, it were hardly probable that the complement fixation test should have been negative.

Fifth. The gonococcus, when it invades connective tissue, excites exudation and sclerosis. In view of the fact that the mass found in the scrotum was sclerotic and that the pus taken from it showed no other organisms than those which in size, shape, grouping and staining properties were typical of gonococci; in view of the fact that, in the long period during which the condition has existed (eleven weeeks), there were at no time pain, temperature, profuse discharge or glandular involvement, or any other signs, such as usually accompany infections by the ordinary pyogenic bacteria, we can assume, properly, that the diplococcus found was the gonococcus.

Sixth. This would in large part be borne out by the cultures made. Although we were unable to obtain a culture of the gonococcus on the Loeffler's blood serum, we were unable to recover from the plain agar or from the blood serum the bacterium we demonstrated in the pus. On the plain agar the colonies of *Staphylococcus aureus* and the Gram positive spore-bearing bacillus were few, and had not been found in the smears. We therefore concluded that they were contaminators.

I wish to express my indebtedness to Dr. Abe Mattes for his col-

laboration in the examining of this case and for his valuable services in conjunction with the bacteriological work.

DISCUSSION.

Dr. Chalaron: In my opinion, the fact that the complement fixation was negative is the strongest indication of primary gonorrhea and not of metastasis. This is a very interesting report, and the possibility of such a rare infection might be explained by the breaking down of the horny layer of the skin, which allowed the passage of the gonococcus into the tissue beneath.

Dr. Johns: I remember a case occurring in Dr. Hume's practice—a gonorrheal infection appearing in the middle portion of the penis. The bacteria from the ulcer were grown and positively identified.

Dr. Kahle (in closing): From the history of the case, after close questioning, I was unable to obtain a history of a breach in the skin at the time of intercourse.

PROCEEDINGS ORLEANS PARISH MEDICAL SOCIETY

ANNUAL MEETING, JANUARY 14, 1918.

REPORT OF THE PRESIDENT, ORLEANS PARISH MEDICAL SOCIETY, FOR THE YEAR 1917.*

BY PAUL GELPI, M. D., New Orleans.

On this annual occasion it is customary for the retiring President to present his report and the President-elect to deliver an address. But in view of your having conferred upon me, for the second time, the highest honor in your gift, the dual function falls to me. I cannot find adequate words to express my deep sense of appreciation, and in thanking you for the honor I want to assure you that I will do all in my power to justify your confidence and exert my every effort to promote the welfare and advancement of our Society.

A year ago I concluded my address by saying: "The seasons will follow swiftly and a twelvemonth will soon pass by, and then you will ask of me an account of my stewardship." I added that the achievements of the year would only be a reflection of what you individually and collectively had done to assist in the work. I am happy to state that this has been a constructive year, thanks to the good team-work not only of those in close touch with the administration, but also of the general membership.

The total membership for the year was 360—the largest in our

* Read at the Annual Meeting of the Orleans Parish Medical Society, January 14, 1918.
[Received for publication February 11, 1918.—EDS.]

history. Owing to resignations and other causes, we begin the year with a membership of 335.

Our bonded indebtedness has been reduced to the extent of $3,300. We were enabled to accomplish this through the great success of our Library Fund Concert, and our books show for the first time a healthy balance. We still have outstanding bonds to the value of $16,500. One of our colleagues has evolved an elaborate plan by means of which he expects to extinguish this debt, and in the course of the year the matter will be submitted for your consideration.

The Society is now in possession of a complete catalogue of all books and periodicals in the library. For this valuable asset we are indebted to our painstaking and efficient librarian, Dr. Chaillé Jamison, who worked assiduously to complete the task before his departure for the front.

I wish to take this opportunity of expressing to your Board of Directors my thanks and gratitude for their valuable assistance. They have been untiring in their efforts, and by their faithfulness, energy and active coöperation have placed the affairs of the Society on a sound business basis. The divorcing of scientific and business sessions necessarily thrust additional work upon them, and they met the condition by organizing into active committees to take complete charge of the management of the Society.

It is not my purpose to enumerate all the questions on which the Board has been called upon to act, but the following are deserving of special mention: Two sets of rules were adopted, one defining the functions of the assistant secretary librarian, the other regulating the workings of the library. The latter have appeared severe to some of our members, but the Board deemed it the best expedient to meet conditions and best calculated to carry out the instructions of the Society to absolutely prevent a repetition of the acts of vandalism which caused such a stir not very long ago.

The librarian was authorized to purchase books on military medicine and United States military requirements.

The Board took a definite stand regarding the exhibition of such pictures as "Twilight Sleep." An attempt was made to stop the showing of this misleading picture, but it failed, because there is no existing law to cover this question.

An important ruling was taken as to the publication of members' portraits in the lay press. It was declared to be against professional ethics except under extraordinary circumstances.

With a view to economy, a duplicating machine was purchased,

which has already saved a considerable amount of money to the Society.

The question of the publication of authors' titles, other than scientific, was taken up. After thorough investigation the Board recommended that the matter should be left to the option of the writer, and it was so written in our contract with our official organ.

The Board has taken a great interest in the movement to induce the Louisiana Medical Society to designate the domicile of our Society as its headquarters. For well-known reasons the movement failed. But the Society is practically of one mind on the subject, and recently, for the third time, voted in favor of the arrangement. The Board believes that this would be of advantage to both bodies and to organized medicine in general, and confidently hopes that the matter will be brought to a successful issue.

Since the beginning of the war the Society has adopted various measures. At a general meeting it unanimously pledged itself to support President Wilson in his declaration of war against Germany. Later, resolutions were passed endorsing the conscription bill, and the services of the Society were officially offered to assist in the examination of conscripts. There were four special meetings on medical war questions. Three meetings were held to hear Capt. Thomas C. Austin, U. S. A., speak on war and military medical topics. The fourth was an aviation meeting, at which Major Isaac W. Jones, U. S. A., was the speaker.

Resolutions were passed asking the United States Government to assume control of the manufacture of salvarsan and neosalvarsan.

The Society unanimously voted to remit the dues of all members who went to the front.

At an enthusiastic meeting it was unanimously decided to raise a large service flag in honor of our members who had joined the army.

In connection with the war, the Society decided to organize a special committee, known as "the Medical Archives Committee," whose function is to keep in touch with our members at the front and to preserve a record of all communications and news referring to them.

Among the committees appointed during the year, the most important were the following: On "Criminal Abortion and Midwivess" on "Workmen's Compensation Law," and on "Members in Distress." It is hoped that the first two committees will report at an early date, in view of the fact that the Louisiana Legislature

will soon be in session. We should certainly give our consideration to these subjects and be prepared to furnish information regarding them.

The Delgado Memorial Committee has finished its labors by the purchase of a painting for the Delgado Museum. They made a happy and fitting selection of a picture, "Lotus," from the brush of one of our best-known artists, Mr. Elsworth Woodward.

We have had to deplore the loss by death of two of our most esteemed members—Dr. W. T. O'Reilly and Dr. M. Thomas Lanaux.

I want to thank Dr. Lucien Landry for his unflagging interest and energy in the preparation of the scientific programs. The work presented was generally of a high character.

The work of the assistant secretary librarian was very satisfactory and his monthly reports to the Board showed evidence of his desire to conserve the best interests of the Society.

I will conclude with a few recommendations. The Committee on Scientific Essays represents, as last year, the different branches of medicine. I would recommend that they work together. It strikes me that the work of the committee should not fall on the shoulders of one man and that more interesting programs could be gotten up if all the members participated.

After a year's experience I wish to strongly recommend that in the near future the members of the Board of Directors be elected for one, two and three years, respectively. The advantage of having members of the Board who had served past administrations was repeatedly recognized. This familiarity with past conditions proved very helpful in many instances.

Finally, I wish to call your attention to the Owen Bill, which is an amendment to the Army and Navy Medical Defense Act. The object of this amendment is to obtain proper recognition of the Medical Reserve and Medical Corps of the Army and Navy, fixing the rate of Army and Navy medical officers and creating ranks corresponding to the other high grades in the Army and Navy.

In order to secure the passage of this act it is imperative not only that the members of the medical profession individually urge their Senators and Representatives to vote for it, but also that the Orleans Parish Medical Society as a body use its influence in the same direction.

The entrance of our great country into the world-war, for the grand and inspiring cause of humanity and democracy, has furnished

us with new problems. A number of our members, with the true spirit of loyalty, courage and patriotism, have gladly given their services to the nation. In consequence, our ranks have been diminished and our financial resources curtailed. As more of our members are called to the colors, conditions will become more acute, and it will be our duty to maintain and preserve the Orleans Parish Medical Society. I feel confident that those who remain at home will rise equal to the occasion, and with true patriotism, professional pride and brotherly feeling will help to tide over the difficulties which may present themselves.

ADDRESS ON WAR SAVINGS.*

By MR. LYNN H. DINKINS, New Orleans.

It rather seems as if we might properly, but roughly, divide the war savings appeal for the support of the citizenship of the United States into three classifications. The order in which I expect to bring them to your attention does not, in my opinion, represent satisfactorily the degree of importance to which each classification is entitled, because it is more than likely that, in its ultimate effect, the intangible factors which may come about as a result of our efforts in the third classification will more than counter-weigh all of the immediate, actual and material advantages which this country and our Allies expect to receive by closely following the suggestions contained in the first two classifications.

Now, in the first place, it is obvious to all that, in order to carry on the war, it is necessary for the government to be provided with abundant financial resources. Heretofore in our history it has only been possible to provide these resources in two ways: First, by taxation; second, by the issue of bonds or certificates of indebtedness. Perhaps this statement should be modified to some extent, on account of the small net revenues derived from the sale of public lands and from the operations of the Postoffice Department. In the recent past our government has taken over the management of our railroads, and it is not unlikely that, under a unified plan of operation, it will derive some net income as a result of this departure. Later on, if the war continues, it may be necessary for it to take over the operation of various manufacturing enterprises. I believe, however, that, even under the most favorable circumstanaces,

*Read by invitation at the Annual Meeting of the Orleans Parish Medical Society, January 14, 1918. [Received for publication February 11, 1918.—EDS.]

the government must rely on receiving its revenues, for the most part from the two sources mentioned—that is, from taxation and from the sale of bonds and certificates of indebtedness.

Usually the certificates of indebtedness issued by the Treasury Department have been purchased only by banks and large corporations, and we are now, I think, for the first time offered an opportunity to purchase such evidences of debt in small amounts. This supplying of the government with money with which to prosecute the war is a very important feature of the War Savings Stamp campaign.

Another thing which the government needs quite as much as it does money is service. The capacity of any one to render service is, of course, limited. We cannot successfully practice medicine, dig trenches, build ships, mine coal and, at the same time, manufacture fur coats, make jewelry and other unnecessary articles which we use for the purpose only of adorning ourselves. During the progress of the war we need to dedicate our services to such ends as will bring about its speedy termination.

One of the incidents of every war is expansion, and I do not think it is necessary for one to cite the reasons for this condition before an audience of Orleans Parish physicians. Expansion carries in its train increased wages, and the employee who suddenly finds his income increased by from 25 to 200 per cent is more than apt to purchase luxuries or unnecessary things. Such action on his part injuriously affects the nation in two ways: First, we lose the use of such money as he wastes; and, secondly, his purchase makes a market for unnecessary articles, insuring the continuance of their production; and since, in order to produce them, service is required, our government, through this misdirected expenditure of the increased wage, suffers from the undesirable diversion of both money and services.

The third classification is somewhat intangible and I am not entirely sure that I can successfully present it so as to impress a company of physicians and surgeons. You men deal with facts, and you will not accept a verdict until its correctness has been abundantly proven as the result of many experiments. One of your greatest associates, to whose memory civilization itself should stand with uncovered head, found it very difficult to convince London that the cause of surgical healing would be immeasurably benefited by the use of his new methods of treatment. His long residence in Edinburgh and Glasgow had converted Scotland, but

for many months the greatest city in the world withheld its approval. In spite of the knowledge of this mental trend, I want to ask your attention for a moment to the psychology of *thrift* and the sociology of *savings*. The war in which we are now engaged is not entirely a conflict between nations. It is, in many respects, a war of humanity against despotism, and its issue may decide the character of the future government of mankind.

Suppose that during this tremendous period of changing conditions we form habits of extravagance, made possible by increased earnings, and that we lay aside nothing for a "rainy day"? When the war ends, as end it must, expansion almost automatically stops, and, instead of scarcity of service, we have a surplus—wages must inevitably decline. Material and products will also decline, but not in the same proportion as wages. In view of what happened in France about one hundred years ago, and in view of what has taken place in Russia during the past few months, I ask you to consider whether or not any movement to conserve the prosperity of the average citizen of our country is not worthy of your best efforts?

MISCELLANY

COLD-PACK CANNING AND BOTULISM.

The United States Department of Agriculture authorizes the following statement:

"Botulism, often called sausage poisoning, is a specific intoxication brought about by an organism isolated by Van Ermengen from insufficiently cooked sausages which had caused a severe outbreak of food poisoning in Belgium in 1895. The symptoms (nausea, gastric pains, visual disturbances, muscular weakness, etc.) are caused by a definite toxin or poison produced by the *Bacillus botulinus* outside of the body.

"The bacillus is an anaërobic organism. It grows readily at 20° to 25° C., but only sparingly at 37°, and there is no conclusive evidence that it produces its toxin to any extent in the digestive tract. It does grow readily and produces its toxin in protein foods, such as meat or fish. Some investigators state that it also produces its toxin readily in protein-containing vegetables like peas, beans and corn. When growing in these foods, the organism produces a very powerful poison, causing the symptoms mentioned above, or

even death, when eaten in extremely small amounts. Fortunately, cases of botulism are not common in this country.

"The *Bacillus botulinus* is spore-forming; but both the organism and its spores are not very resistant to heat. The toxin is also destroyed by boiling. Thorough cooking at the boiling temperature is all that is necessary to kill the organism and destroy its toxin, and cases of botulism are due to the eating of infected food and which has not been sufficiently cooked. Sausages present ideal conditions for the growth, and have been a frequent cause of botulism, hence the name of the disease.

"There is no danger that botulism will result from eating fruits or vegetables which have been canned by any of the methods recommended by the United States Department of Agriculture. No canned goods are to be eaten which show signs of spoilage. In case of doubt as to the contents of a particular can, it must be thrown away. If fed to animals it should be boiled. In the cold-pack method of canning given out by the Department of Agriculture, only fresh vegetables are recommended, and sterilization is accomplished as follows: Cleansing, blanching, cold-dipping, packing in clean, hot jars, adding boiling water, sealing immediately, and then sterilizing the sealed jars at a minimum temperature of 212° F. for one to four hours, according to the character of the material. Since the spores of *Bacillus botulinus* are killled by heating for one hour at 175°, there is no reason to believe that the organism will survive such treatment.

The *Bacillus botulinus* has been found in the digestive tracts of some animals, especially the pig and the fowl, probably occurring there in the same manner as does that of tetanus (lockjaw) in the intestinal tract of the horse. It is not a parasite, in the ordinary sense, but rather a saprophyte. From these sources it may be deposited on the soil, although attempts at isolating it from the soil have generally given negative results."

CURRENT LITERATURE

Gunshot Wounds of the Lungs and Pleura.—*Surgery, Gynecology and Obstetrics*, Vol. XXV, No. 6.—The following general conclusions may be stated (Sir Berkeley Monohan, C. B., Leeds, England):

1. The approximate mortality from gunshot wounds of the chest at all parts of the line of communication is 20 per cent.

2. The causes of death are hemorrhage, as a rule within twenty-eight hours, and sepsis after the third or fourth day.

3. The local conditions in wounds of the chest wall and lung are in all respects similar to those met with in wounds elsewhere. The missiles are the same, their destructive effects upon the tissues are the same, and the infecting organism are the same.

4. The lung tissue is more resistant to attack than many other tissues. The opening of the pleural cavity and the resulting exposure of a large serous sac to infection and all its consequences, add, however, a danger of the most threatening character.

5. The chief essential in the treatment of all cases of penetrating wounds of the chest is rest.

6. In clean, perforating wounds of the chest, rest, together with the cleansing and dressing of the wound of entrance or exit, will lead to the recovery of the great majority of cases.

7. In cases of "open thorax," the earliest and most complete effort possible must be made to secure closure of the wound after an appropriate toilet.

8. In those rare cases of hemorrhage, when hemoptysis is present or when the blood escapes the wound, a direct access to the source of the bleeding must be obtained, when all contingent circumstances permit, and the wound in the lung must be treated by suture preferably, or by plugging of the cavity from which the blood escapes.

9. In cases of hemothorax, when the blood effused is small in quantity and remains sterile, no active measures are necessary, unless absorption is long delayed. Aspiration, repeated if necessary, may then be performed.

10. In cases of hemothorax, when the blood effused is large in amount and remains sterile, aspiration after the seventh or eighth day, or earlier in cases of urgent dyspnea, certainly hastens convalescence, permits a more rapid expansion of the lung, and prevents the formation of firm adhesion, which may permanently cripple free movements of the lung.

11. In cases of hemothorax, whether the amount of blood is small or large, when the infection takes place, open operation is necessary. Early operation, both when the Carrel-Dakin technic or Morrison method is adopted, saves many weeks of convalescence and permits of a more perfect functional recovery.

12. Small foreign bodies, rifle bullets, imbedded in the lung,

often cause no symptoms; they become encapsulated and may safely be left.

13. Larger foreign bodies retained in the lung may cause distressing or disabling symptoms for long periods. In all such cases removal after resection or elevation of the fourth rib through an anterior incision will allow of the safe removal of the projectile from any part of the lung. Pieces of metal removed are almost always infected. ISIDORE COHN.

POST-OPERATIVE PULMONARY COMPLICATIONS.—*Surgery, Gynecology and Obstetrics*, Vol. XXV, No. 6.—The predisposing factors are (Cutler and Morton):

1. Poor general condition—*i. e.*, age, anemia, alcoholism, arteriosclerosis, weak heart or susceptible lungs. (The type that appears superficially as a bad pre-operative risk.)

2. Oral sepsis—*i. e.*, teeth carious, necrotic, etc.; tonsils septic.

3. Preëxisting lung pathology, not only tuberculosis, but bronchitis, emphysema, recently subsided pneumonia.

4. Anesthetic badly given—*i. e.*, forced aspiration of mucus permitted; unnecessary intubation of nasopharynx, vomiting table, etc.

5. The presence of septic foci.

6. Too radical operations that open up, unnecessarily, pathways to the neighborhood of the lungs or to the lungs themselves.

7. Operations in the epigastrium carry the added danger of lung complications through ease of vascular and lymphatic extension.

8. Exposure to cooling fluids or to draughts (vasomotor disturbance).

9. Post-operative pain, resulting in hypostasis from poor expansion.

Prophylactic measures which we suggest to avoid the occurrence of post-operative pulmonary complications:

1. Careful preparation of the mouth; all oral sepsis from teeth and tonsils eradicated; antiseptic mouth-wash and extra careful brushing of the teeth the day of operation. Turner emphasizes the importance of mechanical scrubbing of the mouth with citric acid, the mere uses of mouth-washes being insufficient.

2. Observation of patient for at least two days before operation, to insure absence pathology and septic foci.

3. Carefully administered anesthetic, preferably in the hands of an expert; ether to be given by the drop method. Avoidance of mechanical appliances in mouth and nose, unless indicated. Surgeon to be ready to operate when the patient is prepared.

4. Avoidance of exposure during preparation on the table; no unnecessary petting; plenty of blankets. Again, after operation, particular care to avoid exposure, plenty of blankets, and if the patient is recumbent, these to be pinned about the neck. Operating room temperature above 75° F. The liberal use of hot packs in laparotomies in walling-off the operative field.

5. Avoidance of trauma, especially in the epigastrium and in the neighborhood of large vessels.

6. Asepsis. ISIDORE COHN.

NEWS AND COMMENT

AMERICAN PROCTOLOGIC SOCIETY.—The twentieth annual meeting of the American Proctologic Society will be held in Chicago, June 10-11, 1918, under the presidency of Dr. Jerome M. Lynch, New York.

AN APPEAL TO THE PRESIDENT.—At the annual meeting of the National Institute of Social Science, January 18, the following resolution was adopted: "Resolved, That the President of the United States be urged to institute adequate measures for the conservation of the health and the promotion of the physical efficiency of the nation during the period of the war."

HEROIN AN UNNECESSARY DRUG.—According to the opinion of Dr. Chas. F. Stokes, former physician in charge of the New York City Colony Farm at Warwick, N. Y., in his testimony before a legislative committee investigating the drug evil, the medical profession could do without heroin and the manufacture of this drug should be stopped.

PLAGUE IN CHINA.—Appeals for help are being sent broadcast by American doctors who recently went into the Shansi Province, China, to investigate a pneumonia type of plague prevalent there.

RAILROAD HOSPITAL CAR.—The first National Army hospital car, which has been designed and standardized by the mechanical department of the Erie Railroad from the suggestion of Dr. David Orr Edson, of New York, will be used to transport sick soldiers from the various cantonments to the base hospitals. Seven two-story cots on each side, regular hospital equipment and provision for doctors and nurses make up the main portions of the car.

THE ROCKEFELLER FOUNDATION PLANS.—The Rockefeller Foundation budget for 1918 plans to spend $10,000,000 devoting itself

largely to the two allied fields of work: first, the promotion of public health; second, the advancement of medical education. At present, on account of the war, the Foundation is devoting a large part of its resources to war relief, to work for the welfare of American soldiers, and to other work in connection with the emergency.

FREE MEDICAL ATTENDANCE.—Great Britain has created a new cabinet office, that of Minister of Public Health, appointing Sir Christopher Addison, the noted anatomist and publicist, as its first occupant. This points to the possibility of the nationalization of the medical profession, with free medical attendance on all without charge.

CHILD WELFARE ASSOCIATIONS MEET.—On January 25, 1918, representatives of the American and British Associations for the study and Prevention of Infant Mortality met in New York City. Outlines of the child welfare work done in this country and in the British Isles were presented by Julia Lathrop, of the Children's Bureau at Washington; Dr. Edward Clark and Dr. S. Josephine Baker, of the Bureau of Child Hygiene of the New York Department of Health; Dr. Morris Slemmons, of Yale, and the Countess of Aberdeen, of Scotland. Mrs. William Lowell Putnam, president of the American Association, presided at the meeting.

VETERINARY SURGEONS RECOMMEND HORSE MEAT.—At a conference in the New York Veterinary College, the veterinary surgeons of New York, Connecticut, New Jersey and Massachusetts adopted a resolution calling upon Congress to appropriate immediately $100,000 to establish the inspection of horse meat. According to their view, a great number of horses and ponies on the Western ranges can be made available for food.

TELESCOPES FOR THE NAVY.—An appeal has come from the Navy, through Mr. Franklin D. Roosevelt, Assistant Secretary of the Navy, for the loan of binoculars, spyglasses and telescopes. A record will be kept of the loan, which will be returned to the owners at the end of the war, and the sum of one dollar will be paid to each person from whom the glasses are borrowed, since the government cannot accept material or services without remuneration. Glasses should be forwarded either by mail or express, to Mr. Franklin D. Roosevelt, Assistant Secretary of the Navy, Naval Observatory, Washington, D. C., and each glass should be carefully tagged with the name and address of the owner. Those which are not suitable for naval use will be returned to the sender.

CAMPAIGN FOR NEW MEMBERS.—The National Association for the Study and Prevention of Tuberculosis has now a member-

ship of 2,500, and it is the purpose of the association to increase this membership. To this end a campaign has been started to secure 5,000 new members. The States of the Union have been apportioned and the number of new members to be secured assigned to each. The allotment of some States is as low as ten, others as high as 450. The coöperation of local and State tuberculosis organizations has been enlisted.

Cancer Control.—The American Society for the Control of Cancer has issued its January bulletin reviewing the work of the year 1917. In view of the devastation of life on account of war, the executive committee of the society has decided to push its work more vigorously than ever and a war program has been outlined and approved. Action by State medical societies in appointing special cancer committees, the securing of laboratory diagnosis of suspected specimens, the holding of special meetings of county societies devoted to cancer, the cancer editions of State and local medical publications, the enlistment of State and city boards of health, nurses, women's clubs, the holding of public meetings, etc., are included in the program of the society.

School of Hygiene and Public Health.—The Johns Hopkins University, through the coöperation of the Rockefeller Foundation, will open a school of hygiene and public health in October, 1918. Drs. Wm. H. Welch and Wm. H. Howell will direct the organization. New buildings and laboratories are being erected, and it is hoped to have one of the main buildings ready for the opening of October. The laboratories will be provided, for the present, elsewhere in the university. The degree of Doctor of Public Health will be granted.

Information Wanted on Xerostomia.—Dr. Herman Prinz, of the Thomas Evans Dental Institute, University of Pennsylvania, Philadelphia, wishes to enter into communication with physicians who have had cases of xerostomia (dry mouth) under observation.

The West and the Physically Fit.—South Dakota has the distinction of having the highest percentage of drafted men "physically fit" for service than any other State. Pennsylvania stands at the other end of the list. Of the group of States, thirteen in number, standing second in the percentage list, all but one, Alabama, are in the Middle West, constituting a solid belt from north to south, except for Colorado and New Mexico, which fall in the third group of twenty or more States.

Journal Discontinues.—The *St. Paul Medical Journal* has

been discontinued in order to clear the field for *Minnesota Medicine*, the Journal of the Minnesota State Medical Association, affiliated with the bureau of the American Medical Association.

NATIONAL CHILD WELFARE CAMPAIGN.—A nation-wide campaign, to be continued one year from April 6, 1918, to save one hundred thousand children in this country, has been inaugurated by the Children's Bureau of the United States Department of Labor, Washington, D. C. Each State will be assigned a definite quota of the one hundred thousand lives to save. The methods of work will be those which have already proved efficient in saving children's lives in the United States and other countries. Dr. F. Truby King, who is the active head of the Children's Health Society in New Zealand, which has the highest birth rate and the lowest death rate among infants, will assist in the campaign.

THE COMMON SODA WATER GLASS MUST GO.—According to the views of investigators of public health, the soda water glass has greater possibilities for evil than the public drinking cup and should be abolished. Dr. Tanza, of the United States Public Health Service, believes that the dirty soda fountain has a great deal to answer for in connection with the spread of tuberculosis. He has frequently seen men and women in the advanced stages of consumption drinking at soda fountains, where no effort was made to cleanse the glasses and other utensils beyond a hurried rinsing in standing water.

CALIFORNIA'S MEDICAL LICENSE ACT.—The United States Supreme Court has declared constitutional the California Medical Practice Act, providing for licensing and regulating persons engaged in healing the sick.

REMOVALS.—Dr. Clyde C. Thompson, from Oak Grove to Delhi, La.

Dr. Walter Brem, from 1209 Brockman Building to 932 Maltman avenue, Los Angeles, Cal.

Dr. A. L. Peters, from Jonesboro to McNary, La.

Dr. M. L. Matthews, from Cameron to Sanford, N. C.

PERSONALS.—Dr. Henry Beech Carre, formerly of New Orleans, but now of Vanderbilt University, will leave shortly for France to enter army Y. M. C. A. work.

Capt. Wm. M. Perkins, M. R. C. (New Orleans), after taking a course in brain surgery in New York, visited the city during the past month on his way to Camp Travis, Texas.

Dr. Sidney K. Simon (New Orleans) is acting secretary-treasurer

of the American Society of Tropical Medicine during the absence of Dr. John M. Swan, who is serving on war duty "somewhere in France."

MARRIED.—On January 12, 1918, Dr. Howard Clay Sevier, of Tallulah, La., to Miss Clyde Kell Scott, of Vicksburg, Miss.

BOOK REVIEWS AND NOTICES

Man—An Adaptive Mechanism, by George W. Crile, F. A. C. S. Edited by Annette Austin, A. B. The McMillan Company, New York.

The philosophy of living, at best, affords large fields for conjecture. Any angle which offers an approach to a reason for our present being must be of interest. The study of comparative phases of living matter in its ascent to man brings out the essentials of life all along the trail, and to these have attached the more subtle diversifications which have separated the human from congener mammalian types. As the finer instrument responds to the more sensitive motives, so man functions in ways which have their influence in a coördinated or an involved organ, or group of organs, in which the elements of control would seem to be. The human individual varying from the normal may show exaggerated evidences of the jangled mechanism. The development of the control and the regulation of the adaptive resistance is the conclusion of the author's theory. Many of us have probably thought about much of the idea which the author has put forth, but it is good to have the assembling of such material for reflection. We have so far to go that such side lights should be welcome. DYER.

Personal Health, by Wm. Brady, M. D. W. B. Saunders & Co., Philadelphia and London.

A large amount of information in small compass and presented in terms easily understood. Sensible suggestions are plentiful, and the material service of the book must find a place in aiding to educate the general public, for which the compilation is chiefly intended. DYER.

Pulmonary Tuberculosis, by Edward O. Otis, M. D. W. M. Leonard, London.

As a teacher of the subject of tuberculosis for many years, the author has the basis for a presentation of his subject, which is in evidence throughout the text. The means and way of diagnosis are given, and the particular, careful points to be reckoned in obscure cases. The treatment is reviewed and the care of the tubercular subject is emphasized. Well-selected illustrations are found throughout the book. DYER.

The Healthy Marriage, by G. T. Wrench, M. D., B. S. (London). Second edition. Paul B. Hoeber, New York.

There is a refreshing frankness in this little book, which perhaps will be of more service to mothers and fathers than to the uninitiated. The school of experience is still so largely attended that it can hardly be expected to disappear until marriage is a legal and not a psychologic process. Many like books have been written, and more will appear as the

occasional earnest physician feels the call for recording his experience. Meantime all such contributions will help in the end—by making for a more consistent public mind. DYER.

Hughes' Practice of Medicine. Eleventh edition, revised and enlarged, by R. J. E. Scott, M. A., B. C. L., M. D. P. Blakiston's Son & Co., Philadelphia.

There will always be a demand for such a compendiary, where a practical, modern and brief presentation of diseases is given for the easy reference of the busy practitioner. There has never been any pretense to a cyclopedic function in "Hughes," which speaks for its continued usefulness. The careful revision of each new edition, keeping the material currrent with the times, should continue the popularity of the book.

DYER.

Practical Materia Medica and Prescription Writing, by Oscar W. Bethea, M. D., Ph. G., F. C. A. Second revised edition. F. A. Davis Company, Philadelphia.

It must be gratifying to the author and a satisfaction to the publishers to acknowledge a demand for a second edition of a textbook within two years after the first appearance of the work. The popularity of this text, however, and its wide adoption for student use at a large number of medical schools, has made it necessary to make the content thoroughly up-to-date. The practical character of the book, in its arrangement and method of presenting the material, is apparent at the first glance. Its ready usefulness, then, for student and practitioner, must continue the demand for the publication. No change in form of the material has been made in the second edition—only such additions and revisions as have been necessary in adapting the text to the U. S. Pharmacopeia.

DYER.

Physical Exercises for Invalids and Convalescents, by Edward H. Ochsner, B. S., M. D., F. A. C. S. C. V. Mosby Company, St. Louis.

The illustrations really make this little monograph a valuable contribution to the efficiency of the modern equipment of the physician who takes good care of his patients. The graphic and practical presentation of each exercise make them a guide for the patient himself, and, as such, it may be entrusted to him. As a matter of fact, as shown, the exercises might form a part of the daily routine of the most of doctors themselves, although we should hesitate to recommend all of the exercises given, as this would make a rather pretentious program. DYER.

Impotency, Sterility and Artificial Impregnation, by Frank P. Davis, Ph. B., M. D. C. V. Mosby, St. Louis.

This monograph contains an assemblage of ideas derived from miscellaneous sources, with more or less discussion relating to the topics which give the book its title. The material has a certain interest for those who may be curious, but there is little of thrapeutic or other value outside the suggestions applying to the relief of remediable impotency. The chapter on artificial impregnation has much which might have been omitted to the advantage of the book and the reader.

DYER.

PUBLICATIONS RECEIVED

LEA & FEBIGER, Philadelphia and New York, 1917.

Medical War Manual No. 3. Military Ophthalmic Surgery, by Allen Greenwood, M. D., G. E. de Schweinitz, M. D., and Walter R. Parker, M. D.

Medical War Manual No. 4. Military Orthopedic Surgery. Prepared by the Orthopedic Council.

WILLIAM WOOD & CO., New York, 1918.

State Board Examination Questions and Answers of the United States and Canada. Fifth edition.

P. BLAKISTON'S SON & CO., Philadelphia, 1917.

A Compend of Bacteriology, Including Pathogenic Protozoa, by Robert L. Pitfield, M. D. Third edition.

WASHINGTON GOVERNMENT PRINTING OFFICE, Washington, D. C., 1917.

United States Naval Medical Bulletin, January, 1918 (quarterly).

Public Health Reports. Vol. 32, No. 52; Vol. 33, Nos. 1, 2, 3, 4, 5, 6.

United States Official Postal Guide (Supplement). (Postoffice Department.)

Hay Fever: Its Cause and Prevention in the Rocky Mountain and Pacific States, by William Scheppegrell, A. M., M. D.

Report of the Chemist. (U. S. Department of Agriculture, Bureau of Chemistry.)

MISCELLANEOUS.

Proceedings of the Eleventh Annual Meeting of the Association of Life Insurance Presidents. (New York, 1917.)

The Institution Quarterly. December 31, 1917. (Springfield, Ill.)

Commercialized Prostitution in New York City. November 1, 1917. A Comparison Between 1912, 1915, 1916 and 1917. (Bureau of Social Hygiene, 61 Broadway, New York City.)

The Diagnosis and Treatment of Cerebrospinal Fever With Antimeningitis Serum and Accessories. (H. K. Mulford Co., Philadelphia.)

Quarterly Bulletin Louisiana State Board of Health. New Orleans, December, 1917.

Supplement to Quarterly Bulletin Louisiana State Board of Health. (Official Registration of Physicians, Midwives, Dentists, Embalmers, Undertakers and Nurses.) Corrected to December 26, 1917, inclusive.

REPRINTS.

Hay Fever and Hay Fever Pollens; Hay Fever and Its Relation to One Hundred of the Most Common Plants, Trees and Grasses, by William Scheppegrell, A. M., M. D.

Seven-Day Fever in the Anglo-Egyptian Sudan, by Capt. R. G. Archibald, M. B., D. S. O., R. A. M. C.

Espundia in the Anglo-Egyptian Sudan, by Yusbashi (Captain) B. J. Susu, M. D.

A Sudanese Dermatitis Venenata, by Albert J. Chalmers and Waino Pekkola.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans, for January, 1918.

CAUSE.	White.	Colored.	Total.
Typhoid Fever	2	----	2
Intermittent Fever (Malarial Cachexia)	----	----	----
Smallpox	----	----	----
Measles	----	----	----
Scarlet Fever	----	----	----
Whooping Cough	1	----	1
Diphtheria and Croup	3	1	4
Influenza	23	17	40
Cholera Nostras	----	----	----
Pyemia and Septicemia	----	----	----
Tuberculosis	64	51	115
Cancer	32	8	40
Rheumatism and Gout	----	1	1
Diabetes	6	1	7
Alcoholism	----	----	----
Encephalitis and Meningitis	3	----	3
Locomotor Ataxia	1	----	1
Congestion, Hemorrhage and Softening of Brain	41	11	52
Paralysis	9	4	13
Convulsions of Infancy	----	----	----
Other Diseases of Infancy	11	6	17
Tetanus	2	----	2
Other Nervous Diseases	5	2	7
Heart Diseases	100	66	166
Bronchitis	7	3	10
Pneumonia and Broncho-Pneumonia	73	38	111
Other Respiratory Diseases	4	2	6
Ulcer of Stomach	1	2	3
Other Diseases of the Stomach	1	1	2
Diarrhea, Dysentery and Enteritis	13	5	18
Hernia, Intestinal Obstruction	6	2	8
Cirrhosis of Liver	6	8	14
Other Diseases of the Liver	5	1	6
Simple Peritonitis	----	1	1
Appendicitis	4	----	4
Bright's Disease	26	29	55
Other Genito-Urinary Diseases	10	7	17
Puerperal Diseases	7	1	8
Senile Debility	5	----	5
Suicide	6	----	6
Injuries	31	12	43
All Other Causes	34	29	63
TOTAL	542	309	851

Still-born Children—White, 13; colored, 11; total, 24.

Population of City (estimated)—White, 276,000; colored, 102,000; total, 378,000.

Death Rate per 1,000 per Annum for Month—White, 23.23; colored, 35.54; total, 26.87. Non-residents excluded, 23.28.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure 30.00
Mean temperature 48
Total precipitation ..... 44 inches
Prevailing direction of wind, northeast.